PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)

(Estd. under the Panjab University Act VII of 1947—enacted by the Govt. of India)

SYLLABI

AND THE

STRUCTURAL OUTLINE

FOR

B.A. & B.Sc. GENERAL THIRD YEAR EXAMINATION, 2011

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CONTENTS

STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL AND HONOURS) DEGREE COURSE IN THE 10+2+3 SYSTEM OF EDUCATION FOR FIRST YEAR 2009 EXAMINATION (ALREADY HELD); SECOND YEAR 2010 (ALREADY HELD); THIRD YEAR 2011 EXAMINATION

The new B.A./B.Sc. (General & Honours) course (at + stage) in the 10+2+3 system of education has been structured keeping in view certain basic guidelines as under :--

1. *(i)* The scheme should provide a broad-based, interrelated and comprehensive programme of study, built upon the + 2 stage, which ultimately may act as a sound foundation for postgraduate education, participation in competitive examinations, and joining professional courses like those in Law, Education, etc.

   (ii) It is so structured and organised that it is in conformity with the needs of the country in the present context. Apart from providing good general education, it should have an applied component as part of the course work so that it creates awareness of the practical problems facing the society and generates employability of the youth in diverse spheres of activity.

   (iii) It is so designed and formulated that it provides flexibility and relative freedom of choice of courses to the students according to their special interests and capabilities.

   (iv) It is based on intensive teacher–student interaction.

2. The B.A./B.Sc. courses have been so structured and revised that they are comparable both in content and quality.

3. To cope with the fast increasing knowledge in each discipline, it has been considered desirable to cover each elective subject in two papers.

The two-paper scheme will enable the teachers to teach the subject in detail and examine the students accordingly. Effort has to be made to improve the level and adequacy of content of each course in such a manner that the total scheme provides distinct upgradation of the existing curricula for the first degree. In the absence of such an upgradation, the increase in the total educational period from 14 to 15 years for the B.A./B.Sc. will be unjustifiable.

Keeping in view the above objectives and guidelines, the following structural outline has been introduced for the B.A./B.Sc. (General) degree course :

Admission to B.A./B.Sc. (General and Honours) course for the second and third year (for the students who have passed First Year under this scheme) for the session 2008-2009 (2009 examination) shall be as hereinafter mentioned.

Note : A person who has passed B.A./B.Sc. 1st year or 2nd year examination from other Universities in India may be allowed to migrate to this University subject to the condition that he shall have to clear the deficient subject but the total number of credits required to be earned shall remain the same.

(ii) STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL/HONOURS) DEGREE COURSE IN THE 10+2+3 SYSTEM OF EDUCATION

B.A. (General)

The B.A. (General) programme of study shall consist of **24** credits, each credit having a value of 100 marks. A subject studied for the whole academic year shall carry 2 credits. All the theory papers and practicals irrespective of their credit value shall be studied throughout the academic year.

The detail of the subjects to be studied shall be as under :

1st Year 2009 Examination (already held)

COMPULSORY

(a)	Punjabi – Two Papers	1 Credit	These papers constitute one subject in each year.
	OR		
	*History & Culture of Punjab –One Paper	1 Credit	
(b)	English	1 Credit	

ELECTIVE

+ Any three elective subjects of two credits each including languages and Elective vocational subject (To be studied in selected colleges)	6 Credits
Total :	**8 Credits**

Environment Education : 50 marks

2nd Year 2010 Examination (already held)

Same as in the 1st year

3rd Year 2011 Examination

Same as in the 1st year and 2nd year examination.

Note :

1. In subjects having practicals, the theory papers and practicals together will be of 2 credit value. The candidate will have to pass in theory and practical/s separately.

2. Each paper of one credit shall be allocated 3 hours of teaching per week during each academic year. However, for subjects having practicals, three hours of teaching will be allocated to each theory paper and two hours for a practical per week or as per requirement of the subject concerned.

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* For B.A./B.Sc. History and Culture of Punjab is allowed as an option in lieu of Punjabi (compulsory) to those students who had already offered earlier in the First Year of 2009 examination.

3. B. A. (General) degree holders shall be eligible for admission to the Master's course in any of the elective subjects studied by them during all the three years of the programme of study, earning six credits in each, provided they fulfil the eligibility conditions.

4. A student would offer any science subject, including Mathematics, only if he has passed that subject in the qualifying examination or qualifies in the subject as a deficient/additional subject from the concerned Board/University/Council in the Supplementary Examination subsequent to the admission.

Provided further that a student can offer :

(a) Statistics only if he takes up Mathematics.

(b) Applied Statistics only if he takes up other subject(s) excluding Mathematics.

B.Sc. (General)

The B.Sc. (General) programme of study shall consist of **20** credits, each credit having a value of 100 marks. A subject studied for the whole academic year shall carry 2 credits. All the theory papers and practicals irrespective of their credit value shall be studied throughout the academic year.

The detail of the subjects to be studied shall be as under :

1st Year 2009 Examination (already held)

Punjabi/History & Culture of Punjab	1 Credit
+ Three Elective Subjects of 2 credits each including Elective Vocational subject (To be studied in selected colleges)	6 Credits
Total :	**7 Credits**

Environment Education : 50 marks

2nd Year 2010 Examination (already held)

English	1 Credit
+ Three Elective Subjects of 2 credits each including Elective Vocational subject (To be studied in selected colleges) (the same as in the 1st year)	6 Credits
Total :	**7 Credits**

3rd Year 2011 Examination

Three Elective Subjects of 2 credits each (the same as in the 1st and 2nd Year)	6 Credits
Total :	**20 Credits**

(iv) STRUCTURAL OUTLINE OF THE B.A./B.SC. (GENERAL/HONOURS) DEGREE COURSE IN THE 10+2+3 SYSTEM OF EDUCATION

Note : 1. The two credits allocated to an elective subject, to be studied in an academic year as spelled out above, shall be covered in two theory papers and a practical or practicals as per requirements of the subject concerned.

2. In the instructional process, it is desireable to strike a balance in the teaching and learning strategies. A close interaction between the teacher and the student is necessary to achieve the above objectives.

3. Each elective subject of 2 credits for the B.Sc. shall be allocated five hours of teaching and four hours of practical work per week during the course of the academic year or as per requirements of the subject concerned.

4. B.Sc. (General) degree holders shall be eligible for admission to the M.Sc. course in any of the three elective subjects which they have studied during all the three years of the degree course, earning 6 credits in each, provided the candidate fulfils the eligibility conditions.

B.A./B.Sc. Honours

In addition to the main objectives listed in the preamble to the B.A./B.Sc. (General) degree course, the Honours Course seeks to provide course work of advanced nature in one of the elective subjects already being studied from 1st year onwards by a student. Both in content and quality, it would be of a level as gives adequate specialized knowledge in a subject even to make it a culminating point in the programme of study if a student so chooses. Or else, it should provide strong, additional foundation for pursuing the subject at the M.A./M.Sc. level.

Keeping in view the objectives stated in the preamble to the B.A./B.Sc. (General) degree course and that enunciated above, the structural outline for the Honours degree course shall be as under :

B.A. (Honours)

The B.A. Honours Course shall carry 28 credits (each credit carrying the equivalence of 100 marks). Apart from the structure of the programme of study prescribed for the B.A. (General) degree course, credit value of the subjects/papers and hours of teaching allocated to them as already stated in the scheme, the Honours Course shall include four papers of one credit each of an advanced nature in one of the elective subjects a student shall study in all the three years of the degree course.

A student may offer Honours in Second Year in any one of the elective subjects, to be studied by him in all the three years of the course.

Provided that he has obtained at least 50 % marks in the subject of Honours in the First Year of the B.A. (General) Course.

For the B.A. (Honours) Course, the distribution of work during the three years will be as under :--

1st Year : The same as in B.A. (General). (8 credits)

2nd Year : The same as in 2nd year of B.A. (General). In addition, there shall be two advanced papers of one credit each in the subject in which he seeks to get Honour degree.

(8+2 = 10 credits)

3rd Year : The same as in 3rd year of B.A. (General). In addition, there shall be two advanced papers of one credit each in the Honours subject.

(8+2 = 10 credits)

Total Credits : 28

A candidate eligible to appear as a private candidate in B.A. examination may also offer Honours papers in any of the elective subjects offered for B.A. (General) in all three years provided he fulfils the requirement of the Regulation.

B.Sc. (Honours)

The B.Sc. (Honours) programme of study shall consist of 24 credits, each credit having a value of 100 marks. A subject studied for the whole academic year shall carry 2 credits. All the theory papers and practicals irrespective of their credit value shall be studied throughout the academic year.

A student may offer Honours in any one of the elective subjects to be studied by him in all the three years of the course provided he has obtained at least 50% marks in the subject concerned in the first year examination of the B.Sc. (General) course.

Of the 24 credits, each student shall offer courses in each year as under :--

1st Year : The same as for First Year of B.Sc. (General). (7 credits)

2nd Year : The same as for 2nd Year of B.Sc. (General). In addition, there shall be two advanced papers of one credit each in the subject in which he seeks to get Honours degree.

(7+2 = 9 credits)

3rd Year : The same as for 3rd year of B.Sc. (General). In addition, there shall be two advanced papers of one credit each in the Honours subject.

(6+2 = 8 credits)

Total Credits : 24

Both in B.A. Honours and B.Sc. Honours Courses, each paper of one credit shall be allocated 3 hours of teaching, or as per requirements of the subject concerned.

Note : Instruction through audio and/or video cassettes may form a part of Languages course.

GUIDELINES REGARDING CONTINUOUS ASSESSMENT OF REGULAR STUDENTS OF B.A./B.SC./B.COM. /B.C.A. COURSES

IMPORTANT NOTE

(i) In order to incorporate an element of continuous assessment of students, the Colleges will conduct two mandatory House Tests in theory papers – one in the month of September/October and the other in December/January every year.

(ii) *(a)* For September Test, there will be only one paper of one hour's duration in each subject, and for December Test, there will be paper/s on the pattern of annual examination conducted by the University.

There will be a Special Test for those students who could not fulfil the conditions of eligibility. It will not be held to provide an opportunity to all students to improve their earlier score. Those students who are exempted by the Principal of the College from appearing in the House Test/s in September and/or December/January will also be allowed to appear in the Special Test; this Test will determine their eligibility for admission to the examination as well as their score for Internal Assessment.

(b) With a view to meet the grievance of students, if any, on account of scores obtained by them, the answer-books will be shown to them. Difference of opinion on the issue, if any, will be sorted out with the help of respective Heads of departments as well as the Principal of the College.

(iii) Whereas the September House Test will carry weightage of 40 per cent, the December House Test will have weightage of 60 per cent in each subject/paper. The total weightage for both the Tests taken together shall be10 per cent of the total marks in each theory subject/paper. The weightage of 10 per cent marks shall be added to each paper of B.A./B.Sc./B.Com./B.C.A. I, II and III Year which will, henceforth, carry weightage of maximum marks allotted to each paper. A candidate will have to pass in theory and practical/s separately.

(iv) The record of marks secured by the students in the two House Tests will be sent by the respective Colleges so as to reach the office of Controller of Examinations latest by 15th March, failing which the result of the students shall be shown as 'RLA' and the entire responsibility for this would lie with the Principal/s of the College/s.

(v) The Colleges will continue to forward the internal assessment of the students for Practicals. Projects and similar other activities, wherever applicable, to the Controller of Examinations, as usual, so as to reach his office latest by 15th March.

SPECIAL NOTE :

(i) Each theory question paper will be set out of the marks allotted to each theory paper and 10% marks of the maximum marks of each paper will be internal assessment.

(ii) For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

(iii) It will not be mandatory for the students to separately pass in the internal assessment.

PANJAB UNIVERSITY, CHANDIGARH

OUTLINES OF TESTS, SYLLABI AND COURSES OF READING IN VARIOUS SUBJECTS FOR B.A. (GENERAL) AND B.Sc. (GENERAL), THIRD YEAR EXAMINATION, 2011.

ENGLISH (Compulsory)

(For B.A. Candidates Only)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Outlines of Tests, Syllabi and Courses of Reading

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

Text : 1. *The Merchant of Venice* by Shakespeare (New Clarendon Shakespeare) Ed. Fletcher, Univ. Press, Oxford, 2006.

2. *The Silent Song, 2007 Edition,* 15 Poems (Poem Nos. 4-12, 14-15, 17 & 20-22).

Testing : The paper will be divided into Parts A and B.

PART-A

1.	Reference to context from Poetry (1 out of 2)	10 marks
2.	Reference to context from Play (1 out of 2)	10 marks
3.	Question from Poetry Section (with internal choice)	10 marks
4.	Question from Play (with internal choice)	15 marks

PART-B

1.	Essay (Social & Current topics)	10 marks
2.	Precis (250 to 300 words)	10 marks
3.	Idioms into sentences (5 out of 8)	5 marks
4.	Pairs of words (5 out of 8)	5 marks
5.	Correction of sentences (5 out of 8)	5 marks
6.	One word substitutes (5 out of 8)	5 marks
7.	Antonyms (5 out of 8)	5 marks

Note : For composition, there should be groups of 25-30 students and for text upto 60 students with a minimum of six periods a week.

ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਿਰਫ ਬੀ. ਏ. ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਲਈ

(ਬੀ. ਏ. (ਜਨਰਲ) ਭਾਗ ਤੀਜਾ 2011 ਦੇ ਇਮਤਿਹਾਨ ਲਈ)

ਪੇਪਰ : ਏ

ਕੁੱਲ ਅੰਕ: 50
ਲਿਖਤੀ: 45
ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ: 5
ਸਮਾਂ: 3 ਘੰਟੇ

ਪਾਠਕ੍ਰਮ

1. ਮੱਧਕਾਲ ਦੀਆਂ ਕਵਿਤਾਵਾਂ ਦਾ ਅਧਿਐਨ — 10 ਅੰਕ
2. ਨਾਵਲ ਦਾ ਅਧਿਐਨ — 10 ਅੰਕ
3. ਨਿਬੰਧਾਂ ਦਾ ਅਧਿਐਨ — 10 ਅੰਕ
4. ਉਪਰੋਕਤ ਪੁਸਤਕਾਂ ਤੇ ਆਧਾਰਤ ਲਘੂ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ — 15 ਅੰਕ

ਕੋਰਸ

1. **ਗੁਰਮਤਿ ਅਤੇ ਸੂਫ਼ੀ ਕਾਵਿ,** (ਸੰਪਾ.) ਪ੍ਰੋ. ਪਰਮਜੀਤ ਸਿੰਘ ਸਿੱਧੂ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ
2. **ਤਫ਼ਤੀਸ਼,** ਮਿੱਤਰ ਸੈਨ ਮੀਤ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ
3. **ਚੋਣਵੇਂ ਲੇਖ,** ਪ੍ਰਿੰਸੀਪਲ ਤੇਜਾ ਸਿੰਘ, ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

ਯੂਨਿਟ ਅਤੇ ਥੀਮ

1. ਕਾਵਿ-ਸੰਗ੍ਰਹਿ ਵਿਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ (ਤਿੰਨ ਵਿਚੋਂ ਦੋ) — 5 ਅੰਕ

2. ਕਵਿਤਾ ਦਾ ਸਾਰ ਜਾਂ ਕੇਂਦਰੀ ਭਾਵ (ਤਿੰਨ ਵਿਚੋਂ ਇਕ) 5 ਅੰਕ

3. ਨਾਵਲ ਦਾ ਵਿਸ਼ਾ/ਸਾਰ/ਪਾਤਰ ਚਿਤਰਨ ਬਾਰੇ ਪ੍ਰਸ਼ਨ (ਦੋ ਵਿਚੋਂ ਇਕ) 10 ਅੰਕ

4. 'ਚੋਣਵੇਂ ਲੇਖ' ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਕਾਂਡ ਦਾ ਸਾਰ (ਤਿੰਨਾਂ ਵਿਚੋਂ ਇਕ) 10 ਅੰਕ

5. ਗੁਰਮਤਿ ਅਤੇ ਸੂਫ਼ੀ ਕਾਵਿ, ਨਾਵਲ ਅਤੇ ਨਿਬੰਧਾਂ ਦੀ ਪੁਸਤਕ ਦੇ ਆਧਾਰ ਤੇ ਲਘੂ-ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ :

(ਉੱਤਰ ਇਕ ਤੋਂ ਤਿੰਨ ਸਤਰਾਂ ਤਕ)

(ੳ) ਕਾਵਿ-ਸੰਗ੍ਰਹਿ ਵਿਚਲੀਆਂ ਕਵਿਤਾਵਾਂ ਨਾਲ ਸੰਬੰਧਤ ਲਘੂ-ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

(ਅੱਠ ਵਿਚੋਂ ਪੰਜ) 1×5 = 5 ਅੰਕ

(ਅ) ਨਾਵਲ ਵਿਚਲੇ ਕਾਂਡਾਂ/ ਘਟਨਾਵਾਂ ਅਤੇ ਤੱਥਾਂ ਨਾਲ ਸੰਬੰਧਤ ਲਘੂ-ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ (ਅੱਠ ਵਿਚੋਂ ਪੰਜ) 1×5 = 5 ਅੰਕ

(ਏ) 'ਚੋਣਵੇਂ ਲੇਖ' ਪੁਸਤਕ ਵਿਚੋਂ ਲਘੂ-ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

(ਅੱਠ ਵਿਚੋਂ ਪੰਜ) 1×5 = 5 ਅੰਕ

ਪੇਪਰ : ਬੀ

ਕੁੱਲ ਅੰਕ: 50

ਲਿਖਤੀ: 45

ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ: 5

ਸਮਾਂ: 3 ਘੰਟੇ

ਪਾਠਕ੍ਰਮ

1.	ਲੇਖਕਾਂ ਦਾ ਜੀਵਨ, ਰਚਨਾ ਅਤੇ ਯੋਗਦਾਨ	5 ਅੰਕ
2.	ਪੈਰ੍ਹਾ ਰਚਨਾ	10 ਅੰਕ
3.	ਗੁਰਮੁਖੀ ਲਿੱਪੀ	10 ਅੰਕ
4.	ਅਖਬਾਰਾਂ ਲਈ ਪ੍ਰੈੱਸ ਨੋਟ	8 ਅੰਕ
5.	ਸ਼ਬਦਾਂ ਦੇ ਅਰਥ	4 ਅੰਕ
6.	ਵਿਆਕਰਣ	8 ਅੰਕ

ਯੂਨਿਟ ਅਤੇ ਥੀਮ

1.	ਕਾਵਿ-ਸੰਗ੍ਰਹਿ ਵਿਚੋਂ ਨਿਰਧਾਰਤ ਕਵੀਆਂ ਦੇ ਜੀਵਨ, ਰਚਨਾ ਅਤੇ ਯੋਗਦਾਨ ਬਾਰੇ ਪ੍ਰਸ਼ਨ (ਤਿੰਨਾਂ 'ਚੋਂ ਇਕ)	5 ਅੰਕ
2.	ਲਗਭਗ 250 ਸ਼ਬਦਾਂ ਵਿਚ ਪੈਰ੍ਹਾ ਰਚਨਾ ਕਰਨੀ (ਚਾਰ ਵਿਚੋਂ ਇਕ)	10 ਅੰਕ
3.	ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦੀ ਮੁੱਢਲੀ ਜਾਣਕਾਰੀ ਨਾਲ ਸੰਬੰਧਤ ਪ੍ਰਸ਼ਨ (ਦੋ ਵਿਚੋਂ ਇਕ) ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦਾ ਜਨਮ ਅਤੇ ਵਿਕਾਸ, ਨਾਮਕਰਣ, ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਲਈ ਅਨੁਕੂਲਤਾ ਅਤੇ ਪ੍ਰਮੁੱਖ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ	10 ਅੰਕ
4.	ਅਖ਼ਬਾਰਾਂ ਲਈ ਪ੍ਰੈੱਸ ਨੋਟ ਤਿਆਰ ਕਰਨੇ	8 ਅੰਕ

ਕਾਲਜ ਦੀਆਂ ਸਾਹਿਤਕ, ਸਭਿਆਚਾਰਕ, ਖੇਡ ਅਤੇ ਅਕਾਦਮਿਕ ਖੇਤਰ ਨਾਲ ਸੰਬੰਧਤ ਸਰਗਰਮੀਆਂ ਬਾਰੇ (ਲਗਭਗ 200 ਸ਼ਬਦਾਂ ਵਿਚ)

(ਸਿਰਫ ਇਕ ਪ੍ਰੈੱਸ ਨੋਟ ਹੀ ਤਿਆਰ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇ)

5. ਕਾਵਿ-ਸੰਗ੍ਰਹਿ ਵਿਚੋਂ ਅੱਠ ਸ਼ਬਦਾਂ ਦੇ ਅਰਥ ਦੱਸੋ (ਦਸ ਵਿਚੋਂ ਅੱਠ) 4 ਅੰਕ

6. (ੳ) ਬਹੁ-ਅਰਥਕ ਸ਼ਬਦਾਂ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ (ਛੇ ਵਿਚੋਂ ਚਾਰ) 4 ਅੰਕ

(ਅ) ਸ਼ਬਦ-ਜੁੱਟਾਂ ਦੇ ਅਰਥਾਂ ਦਾ ਵਾਕਾਂ ਦੁਆਰਾ ਅੰਤਰ ਸਪਸ਼ਟ ਕਰਨਾ

(ਛੇ ਵਿਚੋਂ ਚਾਰ) 4 ਅੰਕ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. **ਪੰਜਾਬੀ ਸੰਚਾਰ ਯੋਗਤਾ ਅਭਿਆਸ,** ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ

2. **ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਣ,** ਡਾ. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨੀ ਲਾਲ ਸਿੰਘ, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ

ਨੋਟ : 1. ਟੈਕਸਟ ਲਈ ਹਫ਼ਤੇ ਦੇ ਛੇ ਪੀਰੀਅਡ

2. ਕੰਪੋਜੀਸ਼ਨ ਲਈ 25-30 ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਗਰੁੱਪ ਅਤੇ ਹਫਤੇ ਦੇ ਤਿੰਨ ਹੋਰ ਪੀਰੀਅਡ

3. ਹਫਤੇ ਦੇ 6+3 = 9 ਪੀਰੀਅਡ

HISTORY AND CULTURE OF PUNJAB

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

INSTRUCTIONS FOR THE PAPER SETTER AND CANDIDATES :

1. *The syllabus has been divided into four units.*
   There shall be **9** questions in all. The first question is **compulsory** and shall be short answer type containing 15 short answer type questions, spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any **9** short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain **4** units. Each unit shall have **two** essay type questions and the candidate shall be given internal choice of attempting one question from each Unit – 4 in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper setter must put note (2) in the question paper.

HISTORY AND CULTURE OF PUNJAB 1849-1966 A.D.

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

Objectives : To introduce the students to the history of Punjab and culture in modern times.

Pedagogy : Lectures, library work and discussions.

Unit-I

1. Main features of the early British administration.
2. British policy towards the army, agriculture, industry, trade and commerce.
3. Spread of modern education at primary, secondary and higher levels.

Unit-II

4. The foundation, programme and impact of the socio-religious reform movements : Arya Samaj, Singh Sabhas, Ahmadiyas.
5. Contribution to the growth of political consciousness by the Namdhari movement, uprising of 1907 and Ghadar movement.

6. Contribution to the freedom struggle with special reference to the Gurdwara Reform Movement, Jallianwala Bagh, Bhagat Singh, Non-cooperation and Civil Disobedience.

Unit-III

7. Significant developments leading to independence and partition.
8. Rebuilding of social and economic life after partition.
9. The main stages in the movement for the Punjabi Speaking State; Reorganisation Act of 1966.

Unit-IV

10. New trends in Social life : Gender discrimination; emigration from Punjab.
11. New trends in Economic life : Modernisation of agriculture; land reforms.
12. Development of Punjabi literature with special reference to prose, poetry and drama.

Suggested Readings :

1. Fauja Singh (ed.) : *History and Culture of the Punjab, Part II,* Publication Bureau, Punjabi University, Patiala, 1987.

N.B. : The required detail and depth would conform to the treatment of the subject in the above survey. It would also form the basis for one to two sentence answer questions.

2. Fauja Singh : *Freedom Struggle in the Punjab,* Punjabi University, Patiala, 1974.
3. J.S. Grewal : *The Sikhs of the Punjab*, The New Cambridge History of India, Orient Longman, 1990, Foundation Books, New Delhi, 1994.
4. Khushwant Singh : *A History of the Sikhs*, Vol. II, 1839-1988, Oxford University Press, Delhi, 1991.
5. Satya, M. Rai : *Heroic Tradition in the Punjab,* 1900-1947, Punjabi University, Patiala, 1978.
6. P.N. Chopra, B.N. Puri and M.N. Das : *A Social, Cultural & Economic History of India,* Vol. III, Macmillan, Delhi, 1974.
7. K.C. Yadav and S.M. Fogat : *Haryana Aitihasik Simhavalokan* (Hindi), Haryana Sahitya Akademy, Chandigarh, 1991.

8. R.S. Johar, and J.S. Khanna : *Studies in Punjab Economy,* GNDU, Amritsar, 1983.

9. Monica Das Gupta, T.N. Krishna & Lincon C. Chen : *Women's Health in India, Risk and Vulnerability*, Oxford, OUP, 1998.

ENGLISH (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper –A

Max. Marks		: 100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

1. The following topics from W.H. Hudson's *Introduction to the Study of English Literature* and M.H. Abram's *A Glossary of Literary Terms :*
   Tragedy, Comedy, Tragi-Comedy, Comedy of Humours, Melodrama, Romantic Comedy, Miracle and Morality Plays, Farce, Historical Play, Closet Drama, Drama of Ideas, Revenge Tragedy, Theatre of the Absurd, Modernism, Dramatic Irony, Characterization, Masque, Mime, Ballet, Dialogue, Exposition, Climax, Denoument, Catastrophe, Three Unities, Soliloquy, Tragic Hero, Catharsis, Hamartia, Chorus.

2. *An Anthology of Poetry and Prose from Renaissance to Modern,* Eds. Mutatkar and Sharma (Macmillan, Chennai).

3. *A Midsummer Night's Dream* by William Shakespeare.

Testing :

1.	One question on short notes from No. 1 (5 out of 8 notes to be attempted)	5 X 3 = 15 marks
2.	Reference to the context covering Nos. 2 and 3. Students will be required to attempt two passages from No. 2 and one from No. 3.	6+6+8 = 20 marks
3.	Two out of four questions to be attempted from Poetry	20 marks
4.	Two out of four questions to be attempted from Prose	20 marks
5.	One essay-type question from No. 3 (Play)	15 marks

Note : All questions will have an internal choice.

Paper–B

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

1. Essay Writing (one out of five in about 350-450 words) on Social Issues, Current Affairs and Reflective Type. 20 marks

2. Précis Writing (A Passage of 250-300 words) 15 marks

3. *Translation from Hindi/Punjabi into English 15 marks

4. Applied Grammar :
   (a) One word for many and their use in sentences.
   (b) Word formation and their use in sentences.
   Form Nouns from _____
   Form Adjectives from _____
   Form Verbs from _____
   (c) Idioms.
   (d) Pairs of words to be used in sentences (e.g. alter, altar; complement, compliment etc.) (Choice to the extent of 30 % will be given in this question)

$10 \times 4 = 40$ marks

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*Unseen comprehension passage and a paragraph will be the alternative for foreign students, who do not know Modern Indian Languages for purposes of doing translation/re-translation.

हिन्दी (ऐच्छिक)

बी. ए. (सामान्य) तृतीय वर्ष परीक्षा, 2011

पत्र–एक **पूर्णांक : 90+10 त्र 100**

समय : 3 घण्टे

1. **कुरुक्षेत्र :** अंक : 22

रामधारी सिंह 'दिनकर' प्रकाशक–राजपाल एण्ड संज, नई दिल्ली ।

(क) 6–6 अंकों की दो संदर्भ सहित व्याख्याएँ करनी होंगी। कुल चार काव्यांश दिए जायेंगे।

(ख) 10 अंकों का एक आलोचनात्मक प्रश्न करना होगा। कुल दो प्रश्न पूछे जायेंगे।

2. **गद्य फुलवारी**, सम्पादक डॉ॰ शहाबुदीन शेख, प्रकाशक–राजपाल एण्ड संज, नई दिल्ली। केवल निम्नलिखित पाठ निर्धारित हैं – अंकः 16

'आँसुओं की होली' (प्रेमचंद), 'अकेली' (मन्नु भंडारी), 'चीफ की दावत' (भीष्म साहनी), 'सुभान खाँ' (रामवृक्ष बेनीपुरी), 'भाभी' (महादेवी वर्मा), 'सदाचार का ताबीज' (हरिशंकर परसाई), 'महात्मा गाँधी' (रामकुमार वर्मा), 'मैं धोबी हूँ' (शिवपूजन सहाय), 'गप–शप' (नामवर सिंह), 'जमनोत्री की यात्रा' (विष्णु प्रभाकर)।

3. इस खंड में तीन–तीन अंकों के चार लघु–उतरापेक्षी प्रश्न करनें होंगे। कुल आठ प्रश्न पूछे जाएंगे। प्रत्येक उत्तर की शब्द–सीमा 50 होगी। ये प्रश्न इस पत्र के पूर्वोक्त दो खंडों 'कुरुक्षेत्र' एवं 'गद्य फुलवारी' पर आधारित होंगे। अंक : 12

4. **हिन्दी साहित्य का इतिहास** : अंक : 20

केवल निम्नलिखित गद्य–विधाओं का उद्‌भव और विकास : उपन्यास, कहानी, नाटक, निबन्ध, आत्मकथा, जीवनी, संस्मरण, रेखाचित्र।

इन गद्य विधाओं में से 10–10 अंकों के कम से कम चार प्रश्न पूछे जायेंगे, छात्रों को केवल दो करने होंगे।

5. **वस्तुनिष्ठ प्रश्न :** अंक : 20

नोट : उपर्युक्त तीन खंडों की सामग्री के आधार पर 2–2 अंकों के दस वस्तुनिष्ठ प्रश्नों के उत्तर पूछे जायेंगे। कोई विकल्प नहीं होगा।

6. **आंतरिक मूल्यांकन :** अंक : 10

पत्र–दो **पूर्णांक : 90+10 = 100**

समय : 3 घण्टे

1. **निबन्ध लेखन** (केवल साहित्यिक और सामाजिक विषयों पर) अंक : 16

कुल आठ निबन्धों में से किसी एक निबन्ध पर लिखने के लिए कहा जाएगा।

2. **समीक्षा सिद्धान्त :** अंक : 24

(क) काव्य की परिभाषा तथा भेद, महाकाव्य, खंडकाव्य, गीतिकाव्य की परिभाषा तथा विशेषताएँ।

(ख) गद्य विधाएँ – निबन्ध, संस्मरण, जीवनी तथा आत्मकथा के स्वरूप और तत्त्वों का समान्य परिचय।

उपर्युक्त खंड (क) और (ख) से संबंधित 12–12 अंकों के चार प्रश्न पूछे जायेंगे। इनमें से केवल दो के उत्तर देने होंगे।

3. **छन्द–अंलकार परिचय :** अंक : 30

(क) केवल निम्नलिखित अलंकार निर्धारित हैं :–

अनुप्रास, यमक, श्लेष, वक्रोक्ति, उपमा, रूपक, अतिशयोक्ति, विरोधाभास, उत्प्रेक्षा, प्रतीप।

(ख) केवल निम्नलिखित छंद निर्धारित हैं–

दोहा, सोरठा, चौपाई, रोला, कुण्डलियाँ, सवैया, द्रुतविलम्बित, हरिगीतिका, उपेन्द्रव्रजा, इन्द्रवज्रा।

खंड (क) और (ख) में से 5–5 अलंकारों और छन्दों के केवल लक्षण और उदाहरण पूछे जायेंगे, जिनमें से 3–3 के उत्तर देने होंगे।

4. **हिन्दी भाषा और उसकी लिपि :** अंक : 20

(क) तार/निमन्त्रण पत्र, विज्ञप्ति/विज्ञापन का रूप तैयार करना।

(ख) देवनागरी लिपि : विकास, गुणदोष, सुधार के उपाय।

इनमें से 10–10 अंकों के कुल चार प्रश्न पूछे जाएंगे, जिनमें से छात्रों को दो के उत्तर देने होंगे।

5. आंतरिक मूल्यांकन अंक : 10

सहायक पुस्तकें :

1. हिन्दी का आत्मकथा–साहित्य, विश्वबंधु 'व्यथित', राधा पब्लिकेशन, नई दिल्ली।
2. काव्य के तत्त्व : आचार्य देवेन्द्रनाथ शर्मा, लोकभारती प्रकाशन, इलाहाबाद–1

संस्कृत (इलैक्टिव)

बी. ए. (जनरल) तृतीय वर्ष परीक्षा, 2011

Paper-A उपनिषद्, काव्य एवं योग पूर्णांक : 90+10 = 100

समय : 3 घण्टे

टिप्पणी – प्रश्न पत्र का माध्यम हिन्दी होगा। उत्तरों का माध्यम संस्कृत, हिन्दी, पंजाबी या अंग्रेजी में से कोई एक भाषा होगी।

उद्देश्यः

ईश्वर का स्वरूप तथा सर्वव्यापकता, त्यागपूर्वक जीवन यापन, कर्म का महत्त्व, विद्या, अविद्या, सम्भूति, असम्भूति इत्यादि औपनिषदिक विषयों का अध्ययन करवाना ।

इसी प्रकार विद्यार्थियों को आदिमहाकाव्य वाल्मीकि–रामायण अन्तर्गत सुन्दरकाण्ड (श्लोक संख्या 1–30) की कथावस्तु, प्रकृति चित्रण, भाषा सौन्दर्य से अवगत करवाना ।

इसी के साथ ही गीति काव्यधारा के प्रवर्तक 'मेघदूतम्' के प्रतिपाद्य एवं रचना वैशिष्ट्य के अध्ययनोपरान्त 'योगदर्शनम्' के विभूति–पाद तथा कैवल्य–पाद की शिक्षा द्वारा छात्रों को स्वरूप–जीवन –पथ पर अग्रसर कर स्वस्थ समाज के निर्माण की ओर उत्साहित करना । यही हमारे पूर्वज ऋषियों महर्षियों का भी लक्ष्य रहा है ।

(क)	ईशोपनिषद्		20 अंक
	मन्त्र/मन्त्रांश : अनुवाद एवं व्याख्या	2×5 = 10 अंक	
(ख)	वाल्मीकिरामायणम् (गीता प्रैस, गोरखपुर संस्करण)		10 अंक
	(सुन्दरकाण्ड–सर्ग–15)		
	श्लोकों का मात्रा अनुवाद	1×10 = 10 अंक	
(ग)	मेघदूतम् (पूर्वमेघः)		40 अंक
	(i) श्लोक अनुवाद	2×10 = 20 अंक	
	(ii) समीक्षात्मक प्रश्न	1×10 = 10 अंक	
	(iii) एक सूक्ति की व्याख्या	1×10 = 10 अंक	
(घ)	योग–दर्शनम् (महर्षि पतंजलिकृत्) तृतीय,चतुर्थ–पाद		20 अंक
	(गीता प्रैस, गोरखपुर संस्करण)	4×5 = 20 अंक	
	सूत्रों का अनुवाद		

.....

नोटः

1. पत्र का अध्ययन समय छः पीरियड प्रति सप्ताह होगा ।
2. निर्देश–सभी प्रश्नों में शतप्रतिशत विकल्प आवश्यक हैं ।

Paper-B: व्याकरण, साहित्य, वैदिक मन्त्र तथा निबन्ध पूर्णांक : 90+10 = 100

समय : 3 घण्टे

टिप्पणी – प्रश्न पत्र का माध्यम हिन्दी होगा । उत्तरों का माध्यम संस्कृत, हिन्दी, पंजाबी या अंग्रेजी में से कोई एक भाषा होगी ।

उद्देश्यः–विद्यार्थियों को विसर्ग सन्धि, समास, अलंकार, चतुर्वेद तथा षड्वेदांग का वर्ण्य विषय का अध्ययन करवा कर भास, कालिदास सदृश आठ सुप्रसिद्ध संस्कृत साहित्यकारों की कृतियों से परिचित करवाना ।

इसी के साथ ही स्वस्तिवाचन एवं शान्तिपाठ विषयक मन्त्रों का अध्ययन तथा संस्कृत लेखन के प्रति उत्साहित करना ।

(क) विसर्ग सन्धि 5×1 = 5 अंक

(ख) समास–अव्ययीभाव, बहुब्रीहि 5×2 = 10 अंक

(ग) अलंकार (लक्षण, उदाहरण व स्पष्टीकरण) 2×7 ½ = 15 अंक

उपमा, उत्प्रेक्षा, रूपक, दृष्टान्त, विभावना, विशेषोक्ति

अर्थान्तरन्यास, अनुप्रास तथा यमक

(घ) वैदिक साहित्य का इतिहास (लघु प्रश्न) 2×5 = 10 अंक

(i) वेदों का वर्ण्य विषय

(ii) वेदांग साहित्य का सामान्य परिचय

(ङ) लौकिक संस्कृत साहित्य का इतिहास (लघु प्रश्न–मात्र कृतियों का परिचय)

कृतियों का परिचय भास, कालिदास, भवभूति, बाणभट्ट 2×7 ½ = 15 अंक

माघ, भतृहरि,दण्डी

(च) वैदिक मन्त्र 2×10 = 20 अंक

(i) स्वति वाचन–मन्त्र

(ii) शान्तिपाठ–मन्त्र

:– दो मन्त्रों के अनुवाद/व्याख्या प्रष्टव्य हैं ।

स्वतिवाचनम्

हरिः ओ३म् स्वति न इन्द्रो वृद्धश्रवाः स्वस्ति नः पूषा विश्ववेदाः
स्वति नस्तार्क्ष्यो अरिष्टनेमिः स्वस्तिनो बृहस्पतिर्दधातु ।

ओ३म् पयः पृथिव्यां पय औषधिषु पयः दिव्यान्तरिक्षे पयोधा ।
पयस्वती प्रदिशः सन्तु मह्यम् ।

ओ३म् विष्णोरराटमसि विष्णोः श्नप्त्रोस्थो विष्णोः स्यूरसि विष्णोर्ध्रुवोऽपि,
वैष्णवमसि विष्णवे त्वा ।

ओ३म् अग्निर्देवता वातो देवता, सूर्योदेवता, चन्द्रमा देवता, वसवो देवता,
रुद्रो देवता, आदित्यो देवता, मरुतो देवता, विश्वदेवा देवता, बृहस्पतिदेवता,
इन्द्रो देवता, वरुणो देवता ।

ओ३म् द्यौः शान्तिरन्तरिक्षँ शान्तिः पृथिवी शान्तिरापःशान्तिरोषधयः
शान्तिर्वनस्पतयः,शान्तिर्विश्वेदेवाः, शान्तिर्ब्रह्मः, शान्तिसर्वं शान्ति शान्तिरेव
शान्ति सा मा शान्तिरेधि।। ओ३म् सुशान्तिर्भवतु ।

ओ३म् विश्वानिदेव सवितुर्दुरितानि परासुव । यद्भद्रं तन्न आसुव ।।

ओ३म् इमा रुद्राय तवसे कपर्दिने क्षयद् वीराय प्रभरामहे मतिः । यथा शम्
सद् द्विपदे चतुष्पदे विश्वम् प्रष्टंग्रामे असिमन्ननातुरम् ।।

ओ३म् एतन्ते देव सवितर्यज्ञं प्राहुबृहस्पतये ब्रह्मणे । तेन यज्ञेन यज्ञपतिं
तेन मामव ।।

ओ३म् मनो जूतिजुषतामाज्यस्य बृहस्पतिर्यज्ञमिमं तनोत्वरिष्टं स इममं दधातु ।
विश्वे देवा स इह मां दयन्तां ओ३म् प्रतिष्ठ । एष वै प्रतिष्ठानाम यज्ञो यत्रै तेन
यज्ञेन यजन्ते सर्वमेव प्रतिष्ठितं भवतु ।

ओ३म् सुप्रतिष्ठिता वरदा भवन्तु देवाः ।।

शान्तिःपाठ मन्त्राः

ओ३म् पूर्णमदः पूर्णमिदं पूर्णात् पूर्णमुदच्यते । पूर्णस्य पूर्णमादाय
पूर्णमेवाशिष्यते ।

ओ३म् शान्तिः ! शान्तिः !! शान्तिः !!!

ओ३म् आपयन्तु ममाङ्गानि वाक् प्राणश्चक्षुः श्रोत्रमयो बलमिन्द्रियाणि
च सर्वाणि । सर्व ब्रह्मौपनिषदं माहं ब्रह्म निराकुर्यां मा मा ब्रह्म निराकरोत्,
अनिराकरणमस्त्वनिराकरणं मेऽस्तु । तदात्मनि निरते य उपनिषत्सु धर्मासते
मयि सन्तु, ते मयि सन्तु ।।

ओ३म् शान्तिः ! शान्तिः !! शान्तिः !!!

ओ३म् सह नाववतु । सह नौ भुनक्तु । सह वीर्यं करवावहै । तेजस्वि
नावधीतमस्तु । मा विद्विषावहै ।।

ओ३म् शान्तिः ! शान्तिः !! शान्तिः !!!

ओ३म् भद्रं कर्णेभिः श्रृणुयाम देवा भद्रं पश्येमाक्षभिर्यजत्राः ।
स्थिरैरङ्गैस्तुष्टुवा सस्तनूभिर्व्यशेम हि देवहितं यदायुः ।।

ओ३म् शान्तिः ! शान्तिः !! शान्तिः !!!

ओ३म् वाङ्मे मनसि प्रतिष्ठिता । मनो मे वाचि प्रतिष्ठितमाविरावीर्म एधि ।
वेदस्य मे आणीस्थः श्रुतं मे मा प्रहासीः । अनेनाधीतेनाहोरात्रान्संदधाम्यृतं
वदिष्यामि । सत्यं वदिष्यामि तन्मामवतु । तद्वक्तारमवतु । अवतु मामवतु
वक्तारमवतु वक्तारम् ।।

ओ३म् शान्तिः ! शान्तिः !! शान्तिः !!!

गायत्री मन्त्रः

ओ३म् भूर्भवः स्वः । तत्सवितुर्वरेण्यं भर्गो देवस्य धीमहि । धियो यो नः प्रचोदयात् ।।

(छ) संस्कृत–निबन्ध (तीन में से एक विषय पर दस पंक्तियों का) 15 अंक

संस्कृतभाषायाः महत्त्वम्, मम प्रियः कविः, मम प्रियं पुस्तकम्, दीपावली,
सत्संगतिः, पर्यावरणसुरक्षा ।

नोटः– पत्र का अध्ययन समय छः पीरियड प्रति सप्ताह होगा ।

निर्देशः– सभी प्रश्नों में शतप्रतिशत विकल्प आवश्यक हैं ।

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਬੀ. ਏ. (ਜਨਰਲ) ਭਾਗ ਤੀਜਾ 2011 ਦੇ ਇਮਤਿਹਾਨ ਲਈ

ਪੇਪਰ : ਏ

ਕੁੱਲ ਅੰਕ: 100
ਲਿਖਤੀ: 90
ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ: 10
ਸਮਾਂ: 3 ਘੰਟੇ

ਪਾਠਕ੍ਰਮ

1. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਅਧਿਐਨ — 40 ਅੰਕ
2. ਪੰਜਾਬੀ ਨਾਟਕ ਦਾ ਅਧਿਐਨ — 25 ਅੰਕ
3. ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਬਾਰੇ ਨਿਬੰਧਾਂ ਦਾ ਅਧਿਐਨ — 25 ਅੰਕ

ਕੋਰਸ

1. **ਸੁਰ ਸੰਵੇਦਨਾ,** (ਸੰਪਾ.) ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ (1900 ਈ. ਤੋਂ 2000 ਈ.), ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ
2. **ਕਾਮਾਗਾਟਾ ਮਾਰੂ,** ਹਰਚਰਨ ਸਿੰਘ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ
3. **ਪੰਜ ਆਬ,** (ਸੰਪਾ.) ਪ੍ਰੋ. ਭੁਪਿੰਦਰ ਸਿੰਘ ਖਹਿਰਾ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ

ਯੂਨਿਟ ਅਤੇ ਥੀਮ

1. (ੳ) ਕਾਵਿ ਪੁਸਤਕ ਵਿਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ (ਚਾਰ ਵਿਚੋਂ ਦੋ) — 10 × 2 = 20 ਅੰਕ

   (ਅ) ਤਿੰਨ ਕਵਿਤਾਵਾਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਦਾ ਸਾਰ — 10 ਅੰਕ

   (ਇ) ਤਿੰਨ ਕਵਿਤਾਵਾਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਦਾ ਕੇਂਦਰੀ ਭਾਵ — 10 ਅੰਕ

2. (ੳ) ਨਾਟਕ ਦੀ ਪੁਸਤਕ ਵਿਚੋਂ ਸੰਖੇਪ/ ਲਘੂ ਪ੍ਰਸ਼ਨ (ਅੱਠ ਵਿਚੋਂ ਪੰਜ ਕਰਨੇ ਹਨ) — 5×3 =15 ਅੰਕ

   (ਅ) ਨਾਟਕ ਦਾ ਵਿਸ਼ਾ/ ਪਲਾਟ/ ਪਾਤਰ ਚਿਤਰਣ/ ਰੰਗਮੰਚ ਅਤੇ ਸਾਹਿਤਕ ਆਲੋਚਨਾ — 10 ਅੰਕ

   (ਦੋ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚੋਂ ਇਕ ਕਰਨਾ ਹੈ)

3. (ੳ) ਨਿਬੰਧਾਂ ਦੀ ਪੁਸਤਕ ਵਿਚੋਂ ਸੰਖੇਪ/ਲਘੂ ਪ੍ਰਸ਼ਨ (ਅੱਠ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚੋਂ ਪੰਜ ਕਰਨੇ ਹਨ) — 5×3 =15 ਅੰਕ

   (ਅ) ਨਿਬੰਧ ਵਿਸ਼ਾ–ਵਸਤੂ/ ਸਾਹਿਤਕ ਆਲੋਚਨਾ (ਦੋ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚੋਂ ਇਕ ਕਰਨਾ ਹੈ) — 10 ਅੰਕ

ਪੇਪਰ : ਬੀ

ਕੁੱਲ ਅੰਕ: 1●●
ਲਿਖਤੀ: 9●
ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ: 1●
ਸਮਾਂ: 3 ਘੰਟੇ

ਪਾਠਕ੍ਰਮ

1.	ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (19●1 ਈ. ਤੋਂ 2●●● ਈ. ਤੱਕ)	35 ਅੰਕ
2.	ਸਾਹਿਤਕ ਵਾਦ	2● ਅੰਕ
3.	ਸਾਹਿਤ ਦੇ ਰੂਪ	15 ਅੰਕ
4.	ਵਿਹਾਰਕ ਆਲੋਚਨਾ	2● ਅੰਕ

ਯੂਨਿਟ ਅਤੇ ਥੀਮ

1. **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ** (19●1 ਈ. ਤੋਂ 2●●● ਈ.)

(ੳ) ਕਵਿਤਾ, ਨਾਵਲ, ਨਾਟਕ, ਕਹਾਣੀ, ਵਾਰਤਕ, ਜੀਵਨੀ, ਸਵੈ-ਜੀਵਨੀ ਨਾਲ ਸੰਬੰਧਿਤ ਇਤਿਹਾਸਮੂਲਕ ਅਤੇ ਪ੍ਰਵਿਰਤੀਮੂਲਕ ਪ੍ਰਸ਼ਨ (ਦੋ ਵਿਚੋਂ ਇਕ) — 2● ਅੰਕ

ਨੋਟ: ਪੇਪਰ ਸੈਟਰ ਵੱਲੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਇਤਿਹਾਸਮੂਲਕ ਅਤੇ ਇਕ ਪ੍ਰਵਿਰਤੀਮੂਲਕ ਪੁੱਛਿਆ ਜਾਵੇ।

(ਅ) 19●1 ਤੋਂ ਹੁਣ ਤੱਕ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ ਵਿਚੋਂ ਲਘੂ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

(ਉੱਤਰ ਦੋ-ਤਿੰਨ ਸਤਰਾਂ ਵਿਚ ਹੋਵੇ) (ਵੀਹ ਵਿਚੋਂ ਪੰਦਰਾਂ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ) — 15×1=15 ਅੰਕ

2. **ਸਾਹਿਤਕ ਵਾਦ**

ਸਨਾਤਨਵਾਦ, ਰੋਮਾਂਸਵਾਦ, ਯਥਾਰਥਵਾਦ, ਰਹੱਸਵਾਦ, ਪ੍ਰਗਤੀਵਾਦ (ਦੋ ਵਿਚੋਂ ਇਕ) — 2● ਅੰਕ

3. **ਸਾਹਿਤ ਦੇ ਰੂਪ** : ਨਜ਼ਮ, ਗੀਤ, ਗ਼ਜ਼ਲ, ਰੁਬਾਈ, ਨਾਵਲ, ਕਹਾਣੀ, ਨਾਟਕ, ਸਫ਼ਰਨਾਮਾ, ਜੀਵਨੀ, ਰੇਖਾ-ਚਿੱਤਰ, ਸਵੈ-ਜੀਵਨੀ (ਪੰਜ ਵਿਚੋਂ ਤਿੰਨ) — 3×5 = 15 ਅੰਕ

ਨੋਟ : ਉੱਤਰ 1●-15 ਸਤਰਾਂ ਵਿਚ ਹੀ ਹੋਵੇ।

4. **ਵਿਹਾਰਕ ਆਲੋਚਨਾ**

ਕਿਸੇ ਕਵਿਤਾ ਦੀ ਵਿਹਾਰਕ ਆਲੋਚਨਾ — 2● ਅੰਕ

<u>ਸਹਾਇਕ ਪੁਸਤਕਾਂ:</u>

1. ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੀ ਉਤਪਤੀ ਤੇ ਵਿਕਾਸ, ਡਾ. ਪਰਮਿੰਦਰ ਸਿੰਘ ਤੇ ਕਿਰਪਾਲ ਸਿੰਘ ਕਸੇਲ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।

2. ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਧੁਨਿਕ ਕਾਲ), ਭਾਸ਼ਾ ਵਿਭਾਗ ਪੰਜਾਬ, ਪਟਿਆਲਾ

ਨੋਟ :

1. (ਵਿਹਾਰਕ ਆਲੋਚਨਾ ਲਈ ਕਵਿਤਾ–ਪਾਠ **ਪਰਚਾ ਏ** ਦੀ ਪੁਸਤਕ 'ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ' ਵਿਚੋਂ ਲਿਆ ਜਾਵੇ।

2. ਸਮੁੱਚੇ ਪਾਠਕ੍ਰਮ ਲਈ ਹਫਤੇ ਵਿੱਚ 9 ਪੀਰੀਅਡ।

URDU (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Outlines of tests, syllabi and courses of reading

Paper-A 100 marks

Time : 3 hours

1. Explanation of Prose Passage 30 marks

2. Explanation of Verses 30 marks

   I. Ghazal 20 marks

   II. Nazm 10 marks

3. Summary of a lesson or a poem 10 marks

4. Note on a Prose writer or a poet (which is prescribed in your course) 10 marks

5. Question on the basis of the following forms of prose and poetry:-

   1. Ghazal 2. Nazm 3. Azad Nazm 4. Paband Nazm

   5. Qasida 6. Marsiya 7. Masnavi

   1. Afsana 2. Novel 3. Drama 4. Inshaiya 20 marks

Book Prescribed

Shaoor-e-Adab, Maktaba Jamia, New Delhi-25.

I. All the lessons contained in the prose portion are prescribed except the following:-

   1. Lucknow Ka Chehlam
   2. Yeh London Hai
   3. Natak

II. The complete portion of poetry is prescribed in the course.

Paper-B 100 marks

Time : 3 hours

Short Story, Composition and Literary History of Urdu Literature :-

1. *Study of Short Stories* : Summary and Central Idea 20 marks
2. *Composition* : Essay Writing 20 marks
3. *History of Urdu Literature* 60 marks

1. Urdu Ki Ibtida Aur Irtiqu
2. Urdu Ka Ahd-a-Zarreen, with special reference to the following :-

   (i) Ibrahim Zauq (ii) Asad-ulla-Khan Ghalib (iii) Momin Khan Momin

   (iv) Bahadur Shah Zafar.
3. Urdu Shairi Ke Naye Rujhanat with special reference to the following poets : -

   (i) Mohd. Husain Azad (ii) Altaf Hussain Hali (iii) Brij Narain Chakbast

   (iv) Dr. Iqbal.

4. Taraqqi Pasand Tehrik aur Urdu Shairi with special reference to the following poets :-

   (i) Asrar-ul-Haq Majaz (ii) Faiz Ahmed Faiz (iii) Ali Sardar Jafri

   (iv) Moin Alsan Jazbi
5. Urdu Nasr Ka Irtiqa Aur Fort William College.
6. Urdu Nasr Ka Ahd-e-Zarreen with special reference to the following :-

   (i) Sir Syyed Ahmad Khan (ii) Maulana Shibli Nomani (iii) Altaf Hussain Hali
7. Modern Urdu Fiction :

   General information about the contribution of :

   (i) Krishan Chander (ii) Rajinder Singh Bedi (iii) Qurratulain Haider

   (iv) Ismet Chughtai & Kanhiya Lal Kapoor.

Book Prescribed

Urdu Afsane, Inshaiye aur Drame, Compiled by Mohd. Qasim Siddiqui, Educational Book House, Aligarh.

All the stories Inshaiye Aur Drame except following two :-

1. Nai Aur Purani Tehzib ke Takkar
2. Rustam-o-Suhrab.

Books Recommended

1. Mukhtsar Tarikh Adab-e-Urdu by Sayyed Ejaz Husain.
2. Tarikh Adab Urdu by Ram Babu Saxena.
3. Urdu Adab Ki Tarikh by Azeem-ul-Haq Junaidi.

PERSIAN (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

There will be two paper setter/examiner.

Paper-A : PROSE — Marks : 100; Time : 3 hours

1.	Translation of text pieces into English, Hindi, Urdu, Panjabi or Persian	25 marks
2.	Explanation of text pieces into English , Hindi, Urdu, Panjabi or Persian	25 marks
3.	Summary or central idea of the text prescribed as in Dastanha-ye-Kutah	20 marks
4.	Simple direct questions on the life and works of the authors	20 marks
5.	Short notes.	10 marks
	Total :	100 marks

Book prescribed

Nisabe Jadide Farsi (Published By Jayyad Press Ballimaran Delhi)

Only following portions from Prose Section :

(i) Intekhab-e-Sarzamin-e-Hind-Ali Asghar Hikmat, p. 33-60.

(ii) Dastanha-ye-Kutah.:-

(a) Azaan-e-Maghrib by Saeed Nafisi.

(b) Khukushi By Mohd. Hijazi.

Paper-B : POETRY Marks : 100

Time : 3 hours

1.	Translation of text pieces into English, Urdu, Hindi, Punjabi or Persian	25 marks
2.	Explanation of text pieces into English, Hindi, Panjabi, Urdu or Persian	25 marks
3.	Central idea of the poem	20 marks
4.	Simple direct questions on the life and works of the poets as prescribed in the text.	20 marks
5.	Short notes.	10 marks
	Total :	100 marks

Book Prescribed

Nisab-e-Jadeed-e-Farsi (Published by Jayyad Press Ballimaran, Delhi). Only the following portions of poetry section :

Az Gzalliyat-e-Hafiz :

Agar Aan Turke Shirazi Be Dast Aarad Dile Maara.

Saaqi Benur Badah Bar Afrooz Jam-e-Maa.

Doosh deedam Keh Malayek Dare Maiykhaneh Zadand.

Gazalliyat-e-Khdsrow :

Jan Ze Tan Burdi-o-Dar Jaani Hunooz.

Madeh Pandam ke Man Dar Seeneh Saudayee Digar Daram.

Masanaviy-e-Maulana Rum :

Deed Musa Yek Shabani Rah Be Rah.

Wahi Aamad Suy-e-Musa Az Khusa.

Qasayed-e-Urfi :

Dar Wasf-e-Kashmir.

ARABIC (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

There will be two papers of 100 marks each.

Paper-A Marks : 100

Time : 3 hours

1. Grammar — 50 marks

   Arabia Ka Maullim (Part-IV) by Abdul Sattar Khan is prescribed for the course.

2. Translation of Arabic into English/Hindi/Urdu — 30 marks

3. Writing a Para in Arabic — 20 marks

Paper-B Marks : 100

Time : 3 hours

1. Prose — 60 marks

   The following topics of Al-Abarat by Al-Manfluti :

   1. Al-Zikra
   2. Al-Hawiyah
   3. Al-Jaza

2. Poetry — 40 marks

   The following poets from the book 'Majmu' at

   Min-al-Nazmw al Nathr.

   1. Abdullah Basha Fikri
   2. Al-Barudi
   3. Al-Mutanabbi
   4. Abu-Tammam

(All books can be had from Kutub Khana Rashidiyya, Urdu Bazar, Jama Masjid, Delhi-6)

FRENCH (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : Introduction to Drama, Poetry and Prose

Max. marks		: 100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hrs.

I Literary Master Pieces Drama, TOPAZE by Marcel Pagnol. 25 Marks

Questions, Character sketches and Critical appreciation pertaining to the drama to be asked and answered in French.

II Selected Reading – Poetry 25 Marks
Questions, explanations of stanzas of poems and central ideas, critical appreciation and summaries of the poems to be asked and answered in French.

III Text Book : Le Nouvel Espaces-III (Dossiers 1-8)

(a) Questions to be based on the prescribed text. 20 Marks

(b) Questions on French civilization in the form of fill in the blanks, multiple choice and short answers of 1-2 sentences. 20 Marks

CHOICE TO BE GIVEN IN ALL QUESTIONS

Paper-B : Applied Grammar, Creative Writing and Viva-Voce

Max. Marks		: 100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hrs.

1. Translation from English into French and from French into English of an unseen passage or of short sentences. 20 Marks

2. A composition of about 150 - 200 words. 10 Marks

3. Questions on applied grammar [Questions to be based on grammar section of Le Nouvel Espaces III Dossiers (1-10)] 30 Marks

4. **Viva-Voce :** 30 Marks

1. Dictation of an unseen passage of about 100 words. (Easier than the prescribed text). 10 Marks
2. Conversation (general). 10 Marks
3. Reading (Unseen passage) 10 Marks

Courses of Reading :

POETRY : The following **Eight** poems are to be studied :

1.	Le Lac	Lamartine
2.	Le Pont Mirabeau	Apollinaire (Alcools)
3.	Horloge	Baudelaire (Fleurs du mal)
4.	Les animaux maladies de la peste	Lafontaine
5.	La Grasse matinèe	J. Prèvert (Paroles)
6.	Le colloque sentimental	P. Verlaine
7.	Le manteau impèrial	V. Hugo
8.	Art Poètique	P. Verlaine

Reference Books for Poetry :

1.	French Poetry for students	-	A.W. Bains
2.	Collection Littèraire	-	Legarde, et Michard (XIX et XX siècles).
3.	Les Textes francais	-	XIX et XX Siècles. R. chevalier P. Audiat, Hachett.

Courses of Reading :

Drama - *Topaze,* Marcel Pagnol, Presses, Pocket.

Prose - *Le Nouvel Espaces* – III, Mèthode de francais,
Hachette Guy Capelle (Dossiers 1-10) excluding the parts – extracts (literary texts).

(1) Francophonie, (2) The serial Une femme, Un home,

(3) and the poems from the prescribed textbooks.

N.B. : 1. The latest syllabus strictly to be followed and the question paper should be of B.A. III level.

2. Choice in questions must be given.

3. Eight periods of one hour weekly – six hours for text and two hours for composition.

4. The composition and the unseen passages should be based on the vocabulary and grammar covered till B.A. III.

5. The paper will be set and answered in French (except Translation).

GERMAN (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : Written Paper of 90 marks

Time : 3 Hours

1.	Explanation and interpretation of a poem or stanzas from the prescribed book (German verse).	:	30 Marks
2.	Characterization/Literary question on the prescribed novel (Der Verdacht).	:	30 Marks
3.	Character Sketch/Literary question on the prescribed drama (Andorra).	:	30 Marks
4.	Internal Assessment (for regular students)	:	10 Marks

Note : The question paper shall be set in German.

Paper-B (I) : Theory and Practice of Translation/Written
(This paper is Applied in Nature)

Time : 3 Hours

1.	Translation of unseen texts from German into English. (Two out of three texts)	:	40 Marks
2.	Translation of unseen texts from English into German. (Two out of three texts)		20 Marks

II : Oral 30 Marks

1. Reading of text (s) and General conversation in German
2. Internal Assessment (for regular students) 10 Marks
3. The mode of evaluation for Internal Assessment is to be followed as per University Guidelines.

Prescribed Text Books :

1. German Verse by B.B. Kulkarni and R.N. Chapekar *The Following Poems :*

    1. Ermahnmung (Hofmannswaldau).
    2. Ein Traum ist unser Leben (Herder).
    3. Willkommen and Abschied (Goethe).
    4. Erlkonig (Goethe).
    5. Grenzen der Menschheit (Goethe).
    6. An die Freunde (Schiller).
    7. Hyperions Schiksalslied (Holderlin).
    8. Das Riesenspielzueg (Adelbert von Chamisso).
    9. Abschied (Eichendorff).
    10. Das Karussel (Rike).

2. Der Verdacht by Friedrich Durrenmatt.
3. Andorra by Marx Frisch.
4. Deutsche Text zum ubersetzen (Max Hueber Verlag).
5. Moderne Welt 1 (Deutsch fur Fortgeschrittene) by Heinz Griesbach (Max Hueber Verlag, Munchen).
6. Texts to be supplied by the Teacher for Translation.

RUSSIAN (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : (Option-i) (General Group)

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

1.	Translation from Russian into English/Hindi/Panjabi (about 120 words)	35 marks
2.	Translation from English/Hindi/Panjabi into Russian (about 90 words)	35 marks
3.	Applied Grammar : 4 questions (out of seven) of 5 marks each.	20 marks

Note : **Dictionaries are allowed.**

OR

Paper-A: (Option-ii) (Scientific and Technical Translation)

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

1.	Translation from Russian (Scientific and Tech. material) into English/Hindi/Panjabi (about 120 words).	35 marks
2.	Translation from English/Hindi/Panjabi into Russian (about 75 words).	35 marks
3.	Applied Grammar : 4 questions (out of 7) of 5 marks each.	20 marks

Note : **Dictionaries are allowed.**

Paper-B

Theory	:	60 marks
Internal Assessment	:	10 marks
Time	:	3 hours

1. Biographies of Russian writers from prescribed text books 16 marks
(2 questions of 8 marks each with internal choice)

2. (A) Russian Literature : (2 questions out of 4) on the following of 8 marks each : 16 marks

(i)	A.S. Pushkin	(a)	Nyane	Text-book
		(b)	V Sibir	
		(c)	Ya vas lubeel	
(ii)	L.N. Tolstoy	Posle Bala		
(iii)	A.P. Chekhov	Tolsti i Tonki, Spat' Khochitsa		
(iv)	N.V. Gogol	Revizor		

(B) 2 questions (out of 4) on the following of 9 marks each : 18 marks

(i)	M. Gorky	Mat' (extract)	
(ii)	Konstantin Paustovsky	Belaya Raduga (Page 76)	= DOROGY Moscow, 1979
(iii)	Yuri Kazakov	Goluboi Zeleony (Pages 20-29)	-do-
(iv)	Chingiz Aitmatov	Soldatyonok (Pages 55-59)	-do-

(C) Reference to the context : 10 marks
Prose/Poetry passages from the texts studied (one question out of two)

Paper-C: Oral 30 marks

Independent Translation of about 2500 words from Russian literary, socio-political, popular science texts into English/Hindi/Punjabi.

OR

Narration in Russian on any Two of the following topics :
1. India 2. Russia 3. Sports 4. Biography of any Indian/Russian personality 5. Native State 6. My favourite Russian literary work 7. My favourite Russian writer.

Books Prescribed :

1.	N.S. Burlakov & C.N. Chakravarti	:	A Chrestomathy of Russian Literature, 1970.
2.	Nikolai Bannikov	:	Three Centuries of Russian Literature, Progress Publishers, Moscow, 1980.
3.	T.E. Pecheritsa	:	DOROGI-Stories by Soviet writers, Russian Language, Moscow, 1970.
4.	Dictionaries		

BENGALI (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A Total Marks : 100

Time : 3 hours

History of Literature	40 marks
Short Stories	40 marks
Essay	20 marks

History of Literature : An outline of the history of Bengali Literature.

Short Stories : Tara Shankar Bandopadyaya : Srestha Galpa (first six stories).

OR

Manik Bandopadhaya : Srestha Galpa (first six stories).

Essay : Students are expected to write on a literary topic.

Paper-B Total Marks : 100

Time : 3 hours

Short Stories	40 marks
Biography/Travelogue	40 marks
Essay	20 marks

Short Stories : Sudhir Sarkar (Ed.), Katha Guchha

The following pieces only :

1. Kshudhita Pashan
2. Adarini
3. Abhagir Swarga
4. Bedeni
5. Pui Macha

6. Telini Pota Abiskar

7. Bhusandir Mathe

Travelogue/Biography

Mahaprasthaner Pathe-Prabodh Kumar Sanghal

Essay : An Essay on a literary topic.

TAMIL (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A Total Marks : 100 marks
Time : 3 hours

Applied Grammar	50 marks
Yappu & Ani	50 marks

Paper-B Total Marks : 100 marks
Time : 3 hours

Prose	50 marks
History of Tamil Literature (from Ancient time upto 9th Century)	
Applied Grammar	50 marks
Tamil Syntax and Language Structure	

Books Recommended

(i) Nadaiyiyal by Neethivanan and Sundaramurthy.

(ii) Sollilkkanam by Pulavar Arasu, Published by Kazhagam, 154, T.T.K. Road, Alwarpet, 18, Madras.

(iii) Yappilakkanam and (Aniyilakkanan), Published by Kazhagam, 154, T.T.K. Road, Alwarpet, Madras-108.

(iv) Yappiyal, Aniyial, Solliyal by Kalasagaram Rajagopal, Published by Star Prasuram, Madras.

Prose : Ilakkiyak Katchigal by Dr. C. Balasubramanian, Published by Paari Nilayam, 184, Braodway, Madras-108.

KANNADA (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A

Total Marks : 100

Time : 3 hours

1. *Prose :* 50 marks

   Samakalina Kannada Kavite Pages 91-150 (Bhaga :3), Published by Bangalore University, Banglore.

2. *Novel :* 50 marks

   Mula Mukhi by Anupama Niranjan, Published by D.V.K. Murthy, Krishnamurthy Puram, Mysore-4.

Total : 100 marks

Paper-B

Total Marks : 100

Time : 3 hours

1. Applied Grammar 50 marks

   Figures of speech, Idioms, Proverbs, Khyata, Kannada Kangalas, Some Sanskrit Viruttas, Scanning the Viruttas.

2. History of Kannada Literature (Ancient period) (9th to 12th century) 50 marks

Total : 100 marks

MALAYALAM (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A

Total Marks : 100

Time : 3 hours

1. *Poetry* (Collection of poems) — 50 marks

   'Navathalam' , Edited by Karassery, published by P.K. Brothers, Kozhikode.

2. *Novel :* — 50 marks

   Manase Nee Satchi by G.N. Panikkar, published by N.B.S., Kottayam.

Total : 100 marks

Paper-B

Total Marks : 100

Time : 3 hours

1. *Applied Grammar :* — 50 marks

   Idioms, Proverbs, Prosody and Poetics, Malayala Seili by Kutti-Krishna Marar, published by Marar Sahitya Prakashan, Calicut.

2. *History of Malayalam Literature* (Ancient period upto 15th century). Recommended : Sahitya Sahiyam by A.R. Raajaraja-Verma, N.B.S., Kottayam. — 50 marks

Total : 100 marks

TELUGU (Elective)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A

Total Marks : 100

Time : 3 hours

1.	Applied Grammar	50 marks
2.	Proverbs, Idioms, Sandhis and Figures of Speech.	50 marks
	Total :	100 marks

Paper-B

Total Marks : 100

Time : 3 hours

1.	*Prose :* Kashmira Deepa Kalika by Nayani Krishna Kumari	50 marks
2.	*History of Telugu Literature* (Ancient Period Beginning to VIth century)	50 marks
	Total :	100 marks

PHYSICAL EDUCATION

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

PAPER-A

Max. Marks	:	50
Theory	:	45 marks
Internal Assessment	:	05 marks
Time	:	3 hours

INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS :

(a) There shall be nine questions in all, spread over Five Units.

(b) First question/Unit is compulsory. It will contain nine short answer type questions, spread over the whole syllabus to be answered in about 25-30 words each. It will carry 9 marks.

(c) Rest of the paper shall contain four units for descriptive questions. Each unit shall have two questions and the students shall be given internal choice i.e. the students shall attempt one question from each unit.

(d) All questions/units will carry equal marks.

(e) Private candidates and the students of the University School of Open Learning will not be allowed to take this subject.

UNIT-I 9 Marks

Entire syllabus given in the Unit-II to V will be covered to set nine short answer type questions in first question/unit of the question paper which is compulsory.

UNIT-II 9 Marks

Play and Recreation :

- Meaning and Definition of Play.
- Various theories of play and their significance in Physical Education and Sports.
- Meaning, definition, characteristics, aim, objectives and types of recreation.
- Significance of recreation in the modern society.
- Factors/recent changes responsible for affecting the need for recreation.
- Recreation providing agencies.
- Types of recreational activities.

UNIT-III 9 Marks

Competitions, Camps and Athletic Meet :

- Meaning, importance and conduct of intramural and extramural competitions.
- Meaning and types of tournament and their merits and demerits.
- Draw of fixtures of various tournaments.
- Meaning, aim and objectives of the camp.
- Advantages of camping/outdoor education.
- Types and agencies promoting camping.
- Organization of camps and factors affecting its organization.
- Educative values of a camp.
- Organization of an athletic meet.
- Importance/significance of an athletic meet.

UNIT-IV

9 Marks

Posture, Postural Deformities, Physical Activities and their effects on various physical parameters and vice versa :

- Meaning, types and importance of a good posture.
- Causes, preventive and remedial measures of a poor posture.
- Postural deformities (Kyphosis, lordosis, scoliosis and flat foot), their causes, preventive and remedial measures.
- Physical activities/training and their effects on aging, body composition, and obesity, general problems of obesity and over weight.
- Health related risk factors of obesity and over weight.
- Criterion of obesity and over weight.
- Obesity, over weight and physical activity.
- Causes, preventive and remedial measures of obesity and over weight.

UNIT-V

9 Marks

Massage and Physiotherapy :

- Brief history of massage.
- Meaning and definition of massage.
- Principles/guidelines for massage.
- Types of massage and their benefits.
- Contraindications of massage.
- Effects of massage on skin, blood circulation, nervous system and muscles.
- Meaning and importance of physiotherapy.
- Classification of therapeutic exercises and their benefits.

References :

1. Bell, A.J. : *"Massage and the Physiotherapist : Physiotherapy",* 1964.
2. Butler, G.D. : *"Introduction to Community Recreation",* McGraw Hill Book Company, Inc. New York, 1959.
3. Garinder, M. Dena : *"The Principles of Exercise Therapy",* Fourth Edition, 1985, CBS Publishers and Distributors, Delhi.
4. Gladys Scott, M. : *"Analysis of Human Motion",* 2nd Edition, 1970, Eurasia Publishing House Pvt. Ltd., New Delhi.
5. Lee Joseph : *"Play in Education, National Recreation Association",* New York, 1942.
6. Meyer, Herold D., and Charles K. Brightbill : *"Recreation Administration : A Guide to its Practices",* Prentice Hall Inc., Englewood Cliffs, N.J., 1956.
7. Mitchell, Elmer D., and Bernard S. Mason : *"Theory of Play",* The Ronald Press Co., New York, 1948.
8. Nash, Jay B. : *"Philosophy of Recreation and Leisure",* The C.V. Mosby Co., St. Louis, 1953.
9. Parameswara Ram, N. : *"Kinesiology – Physical Education and Sports",* Parkash Brothers – Educational Publishers, 1988.
10. Piscopo, John and Baley, James A. : *"Kinesiology : The Science of Movement",* John Wiley & Sons, Inc., 1981.
11. Singh, Ajmer *et.al.* : *Modern Text Book of Physical Education, Health and Sports,* Kalyani Publishers, Ludhiana, 2000.
12. Struna, Monika and Church, Connie : *"Self Massage : Touch Techniques of Relax, Soothe and Stimulate your Body",* Hutchinson & Co. Ltd., London, 1983.
13. Tirunarayanan, C. Hariharasarma, S. : *"Methods in Physical Education",* The South India Press, Karaikudi.
14. Wilmore, Jack H. : *"Atheltic Training and Physical Fitness",* 1977, Allyn and Bacon, Inc. 470, Atlantic Avenue, Boston Massachusetts.
15. Wood, Elizabeth C. and Becker, Paul D. : *"Beard's Massage",* Third Edition, 1981, W.B. Saunders Company, Philadelphia, P.A.

PAPER B

Max. Marks		: 50
Theory	:	45 marks
Internal Assessment	:	05 marks
Time	:	3 hours

INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS :

(a) There shall be nine questions in all, spread over Five Units.

(b) First question/Unit is compulsory. It will contain nine short answer type questions, spread over the whole syllabus to be answered in about 25-30 words each. It will carry 9 marks.

(c) Rest of the paper shall contain four units for descriptive questions. Each unit shall have two questions and the students shall be given internal choice i.e. the students shall attempt one question from each unit.

(d) All questions/units will carry equal marks.

(e) Private candidates and the students of the University School of Open Learning will not be allowed to take this subject.

UNIT-I 9 Marks

Entire syllabus given in the Unit-II to V will be covered to set nine short answer type questions in first question/unit of the question paper which is compulsory.

UNIT-II 9 Marks

Nervous System, Excretory System and Endocrine System :

- Meaning of Nervous System.
- Main organs of Nervous System and their functions.
- Reflex action and Reciprocal Innervations.
- Functional classification of Nervous System.
- Meaning of Excretory System.
- Main organs of Excretory System and their structure and functions.
- Meaning of Endocrine System.
- Meaning of Glands, their location and functions/Harmones produced by them.

UNIT-III 9 Marks

Sports Training, General Physiological concept and effects of Physical Exercise/Training :

- Meaning, definition, aim, objective, characteristics and principles of sports training.
- Physiological concepts such as vital capacity, second wind, stitch, in the side and its causes.
- Definition of oxygen debt/excess post exercise oxygen consumption (EPOC) and its implication.
- Meaning definition and types of fatigue.
- Muscular contractions such as isotonic, isometric, eccentric and isokinetic.
- Meaning of Blood pressure, Hypertension : Its causes, effects and treatment, exercise and hypertension.
- Effects of Physical exercise/Training on muscular, respiratory and circulatory systems of the body.

UNIT-IV 9 Marks

Physical Fitness and Training Methods :

- Meaning and definitions of physical fitness.
- Definitions of components of physical fitness, such as endurance, strength, speed and flexibility.
- Development of physical fitness components through various methods of training such as – continuous training method, interval training method. Fartlak training method, circuit training method and weight training method.

UNIT-V 9 Marks

Environmental Factors, Sports Performance and A Coach :

- Variation in temperatures : Exercise in Heat, Cold, Humidity at different altitudes.

- Altitude Acclimatisation and physiological changes.
- Physical performance at altitude.
- Physiological functions at altitude.
- Coaching, coaching philosophy, definition of a coach.
- Qualification and characteristics of a coach.
- Responsibilities of a coach.

References :

1. Chaurasia, B.D. : *"Handbook of General Anatomy",* CBS Publishers and Distributors, First Edition, 1981.
2. Dandiya, P.C., Jafer, Z.Y.K. and Jafer Afifa : *"Health Education and Community Pharmacy",* Second Edition, 1996, Reprinted in 1998, Vallabh Prakashan, Pitampura, New Delhi.
3. Dick, Frank, W. : *"Sports Training Principles",* Lepus Books, London, 1980.
4. Jensen, C.R. and Fisher, A.G. : *"Scientific Basis of Athletic Conditioning",* Lea and Febiger, Philadelphia, 1979.
5. Matveyer, L. : *"Fundamentals of Sports Training",* Mir Publication, Moscow, 1981.
6. Mathews, D.K. and Fox, E.L. : *"The Physiological Basis of Physical Education & Athletics",* Second Edition, W.B. Saunders Co., Philadelphia, 1976.
7. McArdle, William D., Katch Frank I., and Katch, Victor, L. : *"Exercise Physiology : Energy, Nutrition and Human Performance",* Lea and Febiger, Philadelphia, 1981.
8. Morgan, R.E. and Adamson, G.T. : *"Circuit Training",* Bell and Sons, London, 1958.
9. Morehouse, L.E. and Miller, A.T. : *"Physiology of Exercise",* The C.V. Mosby Co., St. Louis, 1965.

10. Parrot, J.W. : *"Anatomy and Physionlogy for Physical Education Teachers",* Lend Edward Arnolod Ltd., 1983.

11. Rose & Wilson : *"Foundations of Anatomy and Phsiology*, 5th Edition, 1981, Reprinted in 1985.

12. Sampath, K. & Uma Maheshwar, B. : *"Human Anatomy & Physiology",* First Edition, 1999-2000, Birla Publications, Delhi.

13. Shaphard, R.J. : *"The Fit Athlete",* Oxford University Press, 1978.

14. Shaver, Larry G. : *"Essential of Exercise Physiology",* Surjeet Publications, Delhi First Indian Print, 1982.

15. Singh, Ajmer, Et.al. : *"Modern Text Book of Physical Education, Health and Sports",* Kalyani Publishers, Ludhiana, 2000.

16. Singh, Hardyal : *"Sports Training-General Theory and Methods",* Netaji Subhash National Institute of Sports, Patiala, 1984.

17. Wilmore, Jack H. : *"Athletic Training and Physical Fitness",* 1977, Allyn and Bacon, Incl., 470, Atlantic Avenue Boston, Massachusetts.

PRACTICAL 100 marks

ATHLETICS

Throws (Shot-put or Discuss Throw or Javelin Throw) and one event of the choice of the student.

(a) Shot-put (The holding the stance, the glide, the delivery and the reverse or the recovery).

OR

Discuss Throw (The handhold, the initial stance, the preliminary swings, turn the delivery and the reverse or the recovery).

OR

Javelin Throw (The grip, the carry, the run way approach, the last five strides, the delivery, the reverse or the recovery).

(b) Measurements of equipment and the throwing circles or the approach run, the arc and the throwing area/the sectors.

GAMES

(Badminton or Hockey and any other one game of the choice of the student).

Badminton :

(a) Measurement (Badminton Court, Net, Racket and Shuttle cock) for singles and doubles.

(b) Number of players and officials.

(c) Holding the racket and shuttle cock.

(d) Types of Service : High and Low.

(e) Types of Strokes : fore hand, back hand, over head.

(f) Shots : Smash, Lobshot, net shot, dive shot.

(g) Rules and regulations of the game.

Hockey :

(a) Measurements (Hockey ground, goalpost, hockey stick, ball and flags) for men and women.

(b) Number and position of players and officials.

(c) Fundamental skills (grip, hitting, stopping dribbling, push, scoop and flick).

(d) Rules and regulations of the game.

Physical Fitness : More emphasis shall be given on variety of physical exercises for the development of physical fitness.

Division of Practical Marks : Marks for each activity shall be divided as under :
Athletics 20 marks, games 30 marks, participation and achievement in sports/games 15 marks, physical fitness 15 marks, viva voce 10 marks and internal assessment 10 marks based on overall performance of a student during the current academic session which will be assessed by the teacher concerned.

Note : 1. Pole-vault, Hammer Throw, Hurdles, Relay races and steeple chase race are not included in the practical syllabus/course due to the fact that these events are highly technical. Moreover, in the absence of proper facilities required for the events mentioned above may prove to be injurious/fatal to the students.

2. 12 periods per week (6 periods each for theory and practicals) shall be allotted to a class.

3. The theory and practical class shall consist of 60-80 students and 30-40 students respectively.

4. The theory (Paper A and Paper B) and practical papers shall consist of 100 marks each.

5. As per the Panjab University Calendar, Chapter XX (Page 298) Volume III, 1996, the maximum teaching work load for a Lecturer in Physical Education for B.A. Pass Course is 24 periods per week, which includes theory as well as practicals.

6. The choice of games by the students shall be confined to the games approved by the Association of Indian Universities.

7. A student is required to prepare a practical note book of athletic events and games given in the syllabus.

EDUCATION

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : INDIAN EDUCATION

Max. Marks		: 100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

GENERAL INSTRUCTIONS FOR THE PAPER-SETTER :

The question paper will consist of five Units : I, II, III, IV and V. Units I, II, III and IV will have two questions from the respective unit of the syllabus and will carry 18 marks each. Unit V will consist of eight short answer type questions which will cover the entire syllabus uniformly and will carry 18 marks. The students are required to attempt 6 short answer type questions out of 8 in unit V which will be compulsory. The question paper should preferably carry internal division of marks for all the sub-questions of one main question. Preferably set the words limit for answer (300-350 words for units I, II, III, IV and 75 words for each short answer question in unit V).

GENERAL INSTRUCTIONS FOR THE CANDIDATE :

The students will be required to attempt one question each from Unit I, II, III and IV. Unit V will be compulsory. The students are required to attempt **6** short answer type questions out of **8** in Unit V.The words limit will be 300-350 words for unit I, II, III and IV and 75 words for each short answer question in unit V.

Objectives :

1. To enable the students to know about History of Indian Education.
2. To enable the students to understand the problems of pre-primary Education.
3. To make the students familiar with the concept of Universalization of Elementary Education and its problems.
4. To make the students familiar with the constitutional provisions of Education and role of different agencies in Education.

Course Contents :

UNIT-I : Education in the ancient and medieval period of Indian History.

UNIT-II : Current status and problems of pre-primary education. Public schools and their future.

UNIT-III : Importance of Elementary Education.
Universalization of Elementary Education. Problems of Elementary Education and Role of the State in Elementary Education.
Sarav Sikhiya Abhiyan – Concept & Implementation.

UNIT-IV : Constitutional Provisions of Education.
Role of Different Agencies – NCERT, NCTE and DIET.
Aims, Objectives and Problems of Secondary Education.

Books Recommended :

1. Kaur, Kuldip : *Education in India (1781-1985),* Policy, *Planning and Implementation,* Chandigarh Centre for Research in Rural and Industrial Development, 1985.
2. Narula and Naik, J.I. : *Bharat Wich Vidyak Sikhya Da Itihas,* Patiala, Punjabi University.
3. Govt. of India, Ministry of Education : *Secondary Education Commission Report*, (1952-53) New Delhi 1953.
4. Govt. of India, Ministry of Education : *Report of Education Commission* (1964-65), New Delhi, 1966.
5. Kochhar, S.K. : *Pivotal Issue of Education,* New Delhi, Sterling Publisher, 1984.
6. Govt. of India, Ministry of Human Resource Development : *National Policy of Education,* New Delhi, 1986.
7. Govt. of India : *Seventh Five Year Plan,* New Delhi.
8. Govt. of India : *Challenges of Education, A Policy Perspective,* New Delhi, 1986.
9. Sodhi, T.S. : *Bharti Sikhya Ate Us Diyan Samasiyavan,* Bawa Publications, Patiala.
10. Govt. of India, Ministry of Human Resource Development : *National Policy on Education, Programme of Action*, New Delhi, 1986.
11. Govt. of India, Ministry of Human Resource Development : *National Policy on Education,* 1986 (with modifications undertaken in 1992), New Delhi, 1992.

Paper-B : MODERN INDIAN EDUCATION

Max. Marks		: 100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 hours

GENERAL INSTRUCTIONS FOR THE PAPER-SETTER :
The question paper will consist of five Units : I, II, III, IV and V. Units I, II, III and IV will have two questions from the respective Unit of the syllabus and will carry 18 marks each. Unit V will consist of eight short answer type questions which will cover the entire syllabus uniformly and will carry 18 marks. The students are required to attempt 6 short answer type questions out of 8 in unit V which will be compulsory. The question paper should preferably carry internal division of marks for all the sub-questions of one main question. Preferably set the words limit for answer (300-350 words for units I, II, III, IV and 75 words for each short answer question in unit V).

INSTRUCTIONS FOR THE CANDIDATE :
The students will be required to attempt one question each from Unit I, II, III and IV. Unit V will be compulsory. Students are required to attempt 6 short answer type questions out of 8 in unit V. The words limit will be 300-350 words for unit I, II, III and IV and 75 words for each short answer question in unit V.

Objectives :

1. To make the students familiar with the structure of Secondary Education in India.
2. To enable the students to know about different policies of education.
3. To make the students familiar with the problems of education for 21st century.
4. To enable the students to know about the need and importance of vocationalisation of education.
5. To enable the students to know about Adult, Continuing and Environmental Education.

Course Contents :

UNIT-I : Secondary Education – Structure, Recommendations of Kothari Education Commission and National Policy of Education

UNIT-II : Implementation of National Policy of Education of 1986 and 1992.

Education in the Tenth Five Year Plan.

Problems and Prospects of Education for the 21st century.

UNIT-III : Vocationalisation of Education – Meaning, Need and Importance.

Education of Weaker Sections of Society.

UNIT-IV : Adult, Continuing and Distance Education.

Environmental Education.

Books Recommended :

1. Narula & Naik, J.P. : *Bharat Wich Vidyak Sikhya Da Ithas,* Patiala, Punjabi University.
2. Sharma, T.R. : *Bharti Sikhya Dian Samasiyan,* Patiala, Punjabi University.
3. Govt. of India, Ministry of Human Resource Development : *National Policy on Education,* 1986 (with modifications undertaken in 1992), New Delhi, 1992.
4. Govt. of India, Ministry of Education : *Secondary Education Commission Report* (1952-53), New Delhi, 1953.
5. Govt. of India, Ministry of Education : *Report of Education Commission* (1964-66), New Delhi, 1966.
6. Kochhar, S.K. : *Pivotal Issues in Education,* New Delhi, Sterling Publishers, 1984.
7. Kaur, K. : *Education in India (1781-1985), Policy, Planning and Implementation,* Chandigarh : Centre for Research in Rural and Industrial Development, 1985.
8. Govt. of India, Ministry of Human Resource Development : *National Policy on Education,* New Delhi, 1986.
9. Govt. of India : *Seventh Five Year Plan,* New Delhi.
10. Govt. of India : *Challenge of Education : A Policy Perspective,* New Delhi, 1986.
11. Govt. of India, Ministry of Human Resource Development : *National Policy of Education,* 1986 (with modifications undertaken in 1992), New Delhi, 1992.

ADULT EDUCATION

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Max. Marks	:	200
Theory	:	90 marks
Internal Assessment	:	10 marks
Practical	:	90 + 10 marks
Time	:	3 hours

GENERAL INSTRUCTIONS FOR THE PAPER-SETTER :

The question paper will consist of five Units : I, II, III, IV and V. Units I, II, III and IV will have two questions from the respective Units of the syllabus and will carry 18 marks each. Unit V will consist of **Eight** short answer type questions which will cover the entire syllabus uniformly and will carry 18 marks in all. Each short question will carry 3 marks.

GENERAL INSTRUCTIONS FOR THE CANDIDATE :

The students will be required to attempt one question each from Units I, II, III and IV. The students are required to attempt **6** short answer type questions out of **8** in Unit V which will be **compulsory**. The question paper should preferably carry internal division of marks for all the sub-questions of one main question.

Objectives of the the Course :

The main objectives of the paper are :

1. To expose students to the concept, importance and scope of continuing education.
2. To provide an overview of women empowerment.
3. To acquaint students with the basis of life skills education, its concept, meaning and its various forms.
4. To acquaint students with role of ICTs and mass media in adult education.
5. To expose students with life long learning and its future perspectives.
6. To equip students with role of universities in adult and continuing education programs.
7. To explain students extension as third dimension.

THEORY :

UNIT-I (a) Continuing Education : Concept, Importance, Scope and Objectives; Types of Continuing Education Programs.

(b) Women Empowerment : Concept, Need and its Importance.

UNIT-II (a) Life Skills Education : Its meaning, Concept and its Various Forms.

1. Psycho-Social Skills
2. Communication Skills
3. Health Living Skills
4. Problem Solving and Decision Making Skills
5. Co-operation and Team Work Related Skills
6. Recreational Skills
7. Computer Related Skills
8. Work Related Skills
9. Disaster Management Skills
10. Entrepreneurial Skills

(b) Role of ICTs and Mass Media in Adult Education.

UNIT-III Life Long Learning : Meaning, Concept, Need, Scope, Strategies, Implications and Future Perspectives.

UNIT-IV (a) Extension as the Third Dimension : Major Thrust. Programs and Activities.

(b) Role of Universities in Adult & Continuing Education Programs.

PRACTICAL/FIELD WORK :

Undertaking any one of the following project and preparation of Report :

1. Organisation of two Awareness Generating Programs and Report Writing.
2. Organisation of two Extension Lectures in Slum Village and Report Writing.

Books Recommended :

1. Singh, Madan Mahanty : *Companion to Adult Educators – National Literacy Mission,* Directorate of Adult Education, Ministry of Human Resource Development, Department of Adult Education, New Delhi, 1999.

2. Suriakanta, V. : *Perspectives of Continuing Education,* Dept. of Adult, Continuing Education & Extension, Gandhi Gram Rural University, Gandhi Gram, 2007.

3. Parthasarathy, K. : *Facets of Adult and Continuing Education,* School of Education, Centre for Adult, Continuing Education & Extension, Bharathidasan University, Trichirappatti, 2006.

4. Parthasarathy, K. : *Population Education and Youth Development,* School of Education, Centre for Adult, Continuing Education and Extension, Bharathidasan University, Trichirappatti, 2007.

5. Alan Rogers : *Teaching Adults,* Sterling Publishers Pvt. Ltd., New Delhi, 1989.

6. Mohanty, J. : *Adult & Non Formal Education,* Deep Publications, New Delhi, 1993.

7. U.G.C. Guidelines (X and XI Plan) for Adult, Continuing Education and Extension : *University Grants Commission,* New Delhi.

8. Pillai, G.P. : *Continuing Education : A Case Study,* The Hindu, 1994.

9. Sharma, S.N. & Prakash Ravi : *Adult Education and Social Growth,* Kanishka Publishers, Distributors, New Delhi, 1996.

MUSIC (Vocal)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

General Instructions :

1. In the case of private candidates, there will be no internal assessment and the marks obtained in the external assessment of the practical examination shall be proportionately increased.
2. There should not be more than eight students in a batch for practical examination.
3. Harmonium will not be allowed as accompaniment in Vocal Music. But harmonium can be used while singing Alankars.
4. The candidate can take Vocal Music along with Instrumental Music.
5. In all, nine questions will be set. The question paper will be divided into five units. Four units will contain two questions each. The candidates are required to attempt five questions selecting at least one question from each unit. In Unit Five, the ninth question based on the Notation shall be **compulsory**.
6. There should be up to eight students in one section.

Outlines of Tests, Syllabi and Courses of Reading

Paper-A :	**THEORY** (3 hrs. duration)	:	90 marks	
Paper-B :	**PRACTICAL**	:	90 marks	
(i)	Choice of Viva	:	70 marks	
(ii)	Harmonium	:	10 marks	
(iii)	Tabla	:	10 marks	
	Internal Assessment (Theory + Practical)	:	10+10 =	20 marks
		Total :		**200 marks**

Paper-A : THEORY

UNIT-I

1. General History of Indian Music i.e. from Bharata to Sharangdeva.
2. Explain the following Gayan Shailies :

   Tappa, Thumri, Tarana, Dhamar, Sadra, Bhajan, and Shabad.
3. Special features of time Theory of Indian Ragas.

UNIT-II

1. Topics of Essays :
   - (i) Kanth-Sadhana.
   - (ii) Lok Sangeet of Punjab.
   - (iiii) Role of Akashwani and Doordarshan towards the popularization of Indian Classical Music.
   - (iv) Sansthagat Sangeet Shikshan Parnali.

UNIT-III

1. Detailed knowledge of V.N. Bhatkhande and V.D. Pulskar's notation systems.
2. Contribution in detail and life sketches in brief of the following :
   - (i) Pt. Kumar Gandharv.
   - (ii) Ustad Bade Gulam Ali Khan.
   - (iii) Ustad Vilayat Hussain Khan.
   - (iv) Pt. Onkar Nath Thakur (Sangeet Martand).

UNIT-IV

1. Description of the ragas and talas prescribed in the course :
   - (i) Ragas : Durga, Jaunpuri, Vrindavani–Sarang, Madhuvanti and Rageshwari.
   - (ii) Talas : Jhumra, Jhaptal, Deepchandi, Dhamar and Adha Tala.
2. Knowledge of writing talas in Thah, Dugun, Tigun and Chaugun layakaries.
3. Non-detailed Ragas :
   Multani, Des, Asavari and Pahadi.

UNIT-V

Knowledge of writing notation of Vilambit Khayals and Drut Khayals in the prescribed Ragas :
Durga, Vrindavani – Sarang, Madhuwanti, Jaunpuri, Rageshwari.

Paper-B : PRACTICAL

1. One Drut Khayal with Alaps &Tanas in each of the following Ragas :
   Durga, Vrindavani –Sarang, Madhuwanti, Jaunpuri and Rageshwari.
2. Two Vilambit Khayals in any two of the prescribed Ragas in the course with extempore –alaps and taanas.
3. Ability to sing one Dhamar in proper style.
4. One Tarana in any of the detailed Ragas prescribed in the course.
5. Ability to sing notations (in swaras) of Drut Khayals in each of the prescribed Ragas.
6. Ability to play Dhamar, Jhaptal on Tabla.
7. Ability to recite the following Talas in Thah, Dugun by hand :
   Jhumra, Jhaptal, Dhamar, Deepchandi and Punjabi Theka.
8. Ability to sing any two Drut Khayals of your course on Harmonium.
9. Knowledge of non-detailed Ragas :
   Ability to sing their Arohas, Avrohas and Pakad with the help of Tanpura : Multani, Des, Pahadi, Asavari.
10. Tuning of Tanpura.

Books Recommended :

1.	*Hamare Sangeet Ratna*	:	Sangeet Karyalayas, Hathras.
2.	*Sangeet Sar Part III*	:	Mrs. Veena Mankaran.
3.	*Folk Instruments of Punjab*	:	Prof. Anil Narula.
4.	*Sangeetanjali, I & IV*	:	Pt. O.N. Thakur.
5.	*Rag Vigyan Part III & IV*	:	Pt. V.N. Patwardhan.
6.	*Bhartiya Sangeet Ka Itihas*	:	Thakur Jaideva Singh.
7.	*Sangeet Shastra Vigyan*	:	Panna Lal Madan.

MUSIC (Instrumental)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

General Instructions :

1. In the case of private candidates, there will be no internal assessment and the marks obtained in the external assessment of the practical examination shall be proportionately increased.
2. There shall not be more than eight students in a batch for practical examination.
3. Harmonium will not be allowed as accompaniment in Vocal Music. But harmonium can be used while singing Alankars.
4. In Instrumental Music, the candidates have the option to take any one of the following instruments : Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai.
5. The candidate can take Vocal Music along with Instrumental Music.
6. The candidate can also take Instrumental Music with Tabla.
7. In all, *nine* questions will be set. The question paper will be divided into five units. Four units will contain two questions each. The candidates are required to attempt Five questions selecting at least one question from each unit. In Unit Five, the *ninth* question based on the Notation shall be **compulsory**.
8. There will be up to eight students in one section.

Paper-A : THEORY (Instrumental) (3 hrs. duration) : 90 marks

Paper-B : PRACTICAL (20 minutes duration) : 90 marks

(i) Viva	:	70 marks	
(ii) Harmonium	:	10 marks	
(iii) Tabla	:	10 marks	
Internal Assessment (Theory + Practical)	:	10 +10 =	20 marks
	Total :		**200 marks**

Paper-A : THEORY

UNIT-I

1 General History of Indian Music i.e. from Bharata to Sharangdeva.

2. Explanation of different Vadan Shailies (Styles) of your own instrument.

3. Historical development of Indian Musical scale.

UNIT-II

1. Importance of Laya and Tala in Music.
2. Varities of Taanas (Toras).
3. Notation System : Origin and development.

UNIT-III

1. The life sketches and contributions of the following musicians :
   (i) Ustad Bismillah Khan
   (ii) Pt. Shiv Kumar Sharma.
   (iii) Smt. Annapurna Devi
   (iv) Pt. Nikhil Banerji

2. Essays :
   (i) Chitrpat Sangeet Mein Vadhyon Ki Bhoomika.
   (ii) Role of Radio and T.V. in popularising Instrumental Music.
   (iii) Folk Instruments of Punjab.
   (iv) Future of Instrumental Music.

UNIT-IV

1. Description of detailed ragas and talas prescribed in the course :
   Ragas : Madhuwanti, Mian-Ki-Todi, Bhimplasi, Jai-Jaiwanti and Ramkali.
   Talas : Dhamar, Adachautal, Tilwara, Sultal.

2. Description of the following non-detailed Ragas :
   Multani, Gujri-Todi, Patdeep, Tilak-Kamod.

UNIT-V

Knowledge of writing notation of Vilambit Gat and Drut Gat in the prescribed Ragas :
Madhuwanti, Mian-ki-Todi, Bhimplasi, Jai-Jaiwanti and Ramkali.

Paper-B : PRACTICAL

1. One Razakhani Drut Gat with Alaps and Toras & Jhalas in each of the following Ragas :
   Madhuwanti, Mian-Ki-Todi, Ramkali, Bhimplasi, Jai-Jaiwanti.
2. Two Maseet Khani (Vilambit) Gats with Alap-Jod and Toras in any of the prescribed ragas.
3. Knowledge of the following non-detailed ragas :
   Multani, Gujri-Todi, Gara, Patdeep.
4. Ability to demonstrate by hands in Ekgun and Dugun layakaries of the following talas :
   Dhamar, Adachautal, Tilwara, Sultal.
5. Ability to play Ektal on Tabla.
6. One gat in Madhya laya Roopak-tal or Sitarkhani Gat with toras in any prescribed ragas.
7. Ability to play few techniques of your Instruments.
8. Ability to sing shudh, komal and tivra swaras with the help of harmonium.
9. Tuning of your Instrument.

Books Recommended :

1.	*Rag Parichaya Part III & IV*	:	H.C. Shrivastava.
2.	*Folk Instruments of Punjab*	:	Prof. Anil Narula (Published by Punjabi University, Patiala).
3.	*Hamare Sangeet Ratna*	:	Sangeet Karayalaya, Hathras.
4.	*Sangeet Granth atey Bharti Sangeet Da Itihas*	:	Chander Kanta, Khosla.
5.	*Sangeet Sar Part III*	:	Mrs. Veena Mankaran.

TABLA (Instrumental Music)

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

General Instructions :

1. In the case of private candidates, there will be no internal assessment and the marks obtained in the external assessment of the practical examination shall be proportionately increased.
2. There will be upto eight students in one section.
3. Harmonium will not be allowed as accompaniment in Vocal Music, but Harmonium can be used while singing Alankars.
4. Candidates can take any other instrument alongwith Tabla out of Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai.
5. The candidate can take Vocal Music along with Instrumental Music.
6. The candidate can also take Instrumental Music with Tabla.
7. In all, 9 questions will be set. The question paper will be divided into five units. Four units contain 2 questions each. The candidates are required to attempt 4 questions selecting at least one question from each unit. The 5th unit based on the notation shall be **compulsory**.

Paper-A : THEORY (Instrumental) (3 hrs. duration) : 90 marks

Paper-B : PRACTICAL (20 minutes duration) : 90 marks

(i)	Viva	:	60 marks
(ii)	Harmonium	:	10 marks
(iii)	Tabla	:	10 marks
(iv)	Padhant on Hand	:	10 marks

Internal Assessment (Theory + Practical) (10 +10) : 20 marks

Total : 200 marks

Paper –A : THEORY

UNIT-I

(a) Classification of Musical Instruments.

(b) Folk Taal instruments of Punjab.

(c) Brief study of following instruments :
Mridangam, Ghatam, Taril, Morchang, Ganjeera, Manjeera.

UNIT-II

(a) Origin and development of Tabla Instrument.

(b) History of Pakhawaj.

(c) Playing technique of Tabla and Pakhawaj.

UNIT-III

(a) Comparison between Uttari and Dakshini Taal system.

(b) Comparative study of Bhatkhande and Paluskar Taal Notation System.

(c) Comparative study of different talas having equal matras :

(i) Teental Tilwada – Panjabi Taal.

(ii) Deepchandi – Jhoomra.

(iii) Roopak – Tivra.

(iv) Jhaptal – Sooltal.

(v) Ektal – Chautal.

UNIT-IV

(a) Significance of Tabla Gharanas in present time.

(b) History and playing techniques of Banaras & Punjab Gharana.

(c) Life sketches and contribution of the following :

Mian Kadar Baksh.

Allarakha Khan.

Ram Sahai.

Kishan Maharaj.

Pt. Anokhe Lal Mishra.

UNIT-V

Ability to write in notation of Quaida, Paran, Gat, Tihais & Peshkar in Sawari, Adachautal, Trital, Jhaptal, Roopak Taal.

Paper-B : PRACTICAL

(a) Talas prescribed Ada Chautal, Tilwara, Dhamar, Matt, Sawari and Tappa Talas including the Talas prescribed in the previous class.

(b) Proper Badhat of Ada–Chautal, Dhamar Sawari, Talas.

(c) Knowledge of playing Dhamar, Chautal.

(d) Playing of all the prescribed Talas with Vocal and Instrumental performance as well as solo item.

(e) Tuning of Tabla.

(f) Practical knowledge of the following in the prescribed Talas :

(i) Dhamar – Simple Paran, Chakardar Paran, Farmaishi Paran, Jhula Paran, Tukra, Mukhra, Mohra, Uthan.

(ii) Sawari (15 matras) Peshkara, Quaida, Gat, Paran.

(iii) Tilwara – Vilambit, Theka with Sangal.

(iv) Matt Tal (18 matras), Tappa, Theka on Tabla.

(v) Ada-chautal-Peshkar, Quaida, Palta, Rola, Paran.

Books Recommended :

1. *Tala Parichya Part I, II & III* : G.C. Srivastava.
2. *Bhartiya Taalon Ka Shastriya Vivechan* : Arun Kumar Sen.
3. *Taal Maartand* : B.S. Sharma.
4. *Bhartiya Sangeet Vadya* : L.M. Mishra.
5. *Hamare Sangeet Ratna* : Sangeet Karyalaya, Hathras.

INDIAN CLASSICAL DANCE

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

General Instructions :

1. In the case of private candidates, there will be no Internal Assessment and the marks obtained in the External Assessment of the Practical Examination shall be proportionately increased.

2. In all, *nine* questions will be set. The question paper will be divided into five units. Four units will contain two questions each. The candidates are required to attempt five questions selecting at least one question from each unit. In unit Five, the ninth question based on Notation shall be **compulsory.**

3. Harmonium will be allowed to play Nagma.

4. The practical paper shall be set from the syllabus prescribed for Paper-B (Practical).

Paper-A : THEORY (3 hours duration)			:	90 marks
Paper-B : PRACTICAL (20 minutes duration)			:	90 marks
(i)	Viva	: 60 marks		
(ii)	Harmonium	: 10 marks		
(iii)	Tabla	: 10 marks		
(iv)	Padhant on Hand	: 10 marks		
Internal Assessment (Theory + Practical)		: 10 + 10	=	20 marks
		Total :		**200 marks**

Paper-A: THEORY

Unit-I

(a) Knowledge of techniques of Indian Ballet.

(b) Origin of dance and its development upto Mughal period.

(c) Study of Rasa and its importance.

Unit-II

(a) Origin of Tala and its various aspects.

(b) Brief study of folk and classical dance.

(c) Knowledge of Dakshini Tala system.

Unit-III

(a) Survey and essential characteristics of Manipuri dance.

(b) Important characteristics of Kathakali dance.

(c) Survey and essential characteristic of Kathak dance upto 20th century.

Unit-IV

(a) Dance and other fine arts.

(b) Dance and religion.

(c) A brief study of Natya Shastra.

Unit-V

Description of Talas prescribed in the course :

Swari-Taal & Teen-Taal (15 Matra).

PAPER–B : PRACTICAL

(a) Swari Tal (Matra 15)

Tatkars in Single, Dugun and Chaugun Layakaries :

Amad	:	1
Tora	:	6
Paran	:	2
Chakardar Paran	:	1
Kavit	:	2

(b) Teen-Taal – 1

(i) Tatkar with Paltas

(ii) Amad	:	1
(iii) Chakardar Tora	:	1
(iv) Paran	:	2
(v) Chakardar Paran	:	2
(vi Tisrajati Paran	:	1
(vii) Kavit	:	2

(c) Demonstrate Dhamar (14 matra) with Tatkar, Tukras and Toras.

(d) Anyone Gat Bhava of the following :
Panghat Ki Chhed-Chhad.

(e) Practical demonstration of Asmyukta and Sanyukta hand gestures according to Abhinaya Darpan.

(f) Ability to Demostrate practically the folk dances of Haryana.

Books Recommended :

1.	*Kathak Darpan*	:	T.R. Azad.
2.	*Kathak Nritya Shiksha Part I & II*	:	Puru Dadhich
3.	*Kathak Shingar*	:	T.R. Azad.
4.	*Nritya Prashan Panjika*	:	J.N. Pathak.

FINE ARTS

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : THEORY (History of Art) Max. Marks : 60

Paper-B : Practical

This paper consists of three sections :

		Max. Marks	*Max. Time*
1..	Landscape Composition	30	5 hours
2.	Life Sketching	30	5 hours
3.	Illustration in Advertising or Clay Modelling	30	5 hours
	Total :	**90**	

SESSIONAL MARKS : 50

(Based on work related equally to 3 sections)

Note : Minimum of 9 hours' teaching per week be assigned and out of nine hours, six hours be earmarked for practical classes and three hours for theory classes (per week)

THEORY

Paper-A : History of Art

Max. Marks : 60

Time : 3 Hrs.

Note :

1. The paper-setter is required to set 9 questions in all. The candidate is to attempt 5 questions as per the instructions given in the question paper.

2. The first question shall be of short answer type containing 10 questions spread over the whole syllabus. Each question is to be answered in about 25 to 30 words. It shall carry 20 marks and shall be a Compulsory question.

3. 8 questions are to be set from the entire syllabus consisting of 4 units. Two questions will be set from each unit and the candidates shall be given internal choice i.e. a candidate shall attempt one question from each unit. So in all, the candidate shall attempt 4 questions in all out of 8 questions. Each question would be of 10 marks.

Objectives :

The aim of the paper is to introduce to the students various schools, styles and phases of the developments in painting and sculpture in India and the west. The emphasis will be to make them aware of the different terms, concepts, forms and subject matter of these works.

UNIT-I : History of Indian Painting

- Rajasthani Painting – Chavand Ragmala from Mewar, Raga-Ragini from Bundi, Nayika from Kishangarh.
- Pahari Painting – Basohli Ramayana, Gita-Govinda from Kangra.
- Company Painting.
- Folk Style – Kalighat and Maithili.

UNIT-II : History of Indian Sculpture

- Elephanta – Mahishasuramardini from Mahabalipuram, Ardhanarishavara.
- Chola Bronzes – Nataraja and Parvati images.
- Khajuraho – Mother and Child.
- Konarak – Musician figures.
- Sravanbelgola – Bahubali.
- Terracotta Sculptures from the Medieval Period.

UNIT-III : History of Western Art

- Beginning of Modern Painting – Manet
- Impressionism – Monet
- Neo Impressionism – Seurat
- Post Impressionism – Van Gogh
- Fauvism – Matisse
- Cubism – Picasso
- Surrealism – Salvador Dali
- Expressionism – Edvard Munch
- Sculpture – Rodin, Henry Moore

UNIT-IV : Definition of key terms, general concepts and techniques

- Form and Content, Art and Soul, Art and Society, Tradition, Modernity, Beauty, Rasa and Bhava, Gestures, Postures and Movements, Stained glass, Cire-perdue (lost-wax casting)

Pedagogy :

The students are expected to familiarize themselves with the art forms as seen from the books, slides and related films.

Suggested Readings :

1. Majumdar, R.C. (editor) : *The History and Culture of Indian People,* Vols. I, II and III (Sculpture and Painting Sections only), Bhartiya Vidya Bhawan, Bombay, 1996, 1990, 1988.
2. Goswamy, B.N. & Fischer, E. : *Pahari Masters : Court Painters of Northern India,* Museum Reitberg, Zurich, Switzerland, 1992.
3. Khandalwala, Karl : *Pahari Miniature Painting,* The New Book Co. Pvt. Ltd., Bombay, 1958.
4. Rowland, Benjamin : *The Art and Architecture of India,* Penguin Books, Great Britain, 1959.
5. Saraswati, S.K. : *A Survey of Indian Sculpture,* Munshiram Manoharlal Publishers Pvt. Ltd., New Delhi, 1975.
6. Ray, N.R. : *An Approach to Indian Art,* Publication Bureau, Panjab University, Chandigarh, 1974.
7. Barrett, D. and Gray, B. : *Painting of India,* The World Publishing Co., Ohio, 1963.
8. Archer, W.G. : *India and Modern Art,* George Allen & Unwin Limited, London, 1959.
9. Aggarwala,V.S. : *Heritage of Indian Art,* Publications Division, Ministry of Information & Broadcasting, Govt. of India, New Delhi, 1976.
10. --do-- : *Indian Art* (English), Varanasi, 1965.
11. --do-- : *Bhartiya Kala* (Hindi), Prithvi Prakashan, 1977.
12. Read, Herbert : *Meaning of Art,* Faber & Faber, London, 1972.
13. Janson, H.W. : *History of Art,* Thames & Hudson, London, 2001.

14. Gardener, Helen : *Art Through the Ages,* Harcourt Brace & Co., U.S.A., 1991.

15. Gombrich, E.H. : *The Story of Art,* Phaidon Press Limited, New York, 1995.

16. Arnason, H.H. : *A History of Modern Art,* Thames & Hudson, London, 1988.

PRACTICAL

Paper-B : Practical

This paper consists of three sections :

	Max. Marks	*Max. Time*
1. Landscape Composition	30	5 hours
2. Life Sketching	30	5 hours
3. Illustration in Advertising or Clay Modelling	30	5 hours
Total :	**90**	

Note : The same paper setter will be requested to set papers in all the three options in Section-III.

SECTION-I

Landscape Composition

Landscape Composition : By Imagination or on the spot. Emphasis should be on Linear perspective, aerial perspective, colour, tones and textures as visible.

Medium : Oil, Water or Pastel colours

Size : ½ Imperial sheet

SECTION-II

Life Sketching

Life Sketching : From live model or – coloured in any medium on ½ Imperial Sheet.

Approach to work should be academic relating to proportion, structure, Tonal Values, Volume and perspective and Individuality of the model.

SECTION-III

Illustration in Advertising or Clay Modelling

Illustration in Advertising :

To launch and promote a product and campaign advertisement, understanding of modern technique.

Concept of lettering : Block lettering, Roman lettering, Script lettering and free hand brush lettering. To design. To design book cover with illustration and title, author's name etc. in three colours (excluding the background colour)

Medium : Poster & Ink

Size : Half Imperial sheet

OR

CLAY MODELLING :

To render animal or human forms in clay in relief. Minimum number of three forms to be composed. Size of slab minimum 30 cms. × 25 cms. Creative Pottery – Creative Pot making in clay – any size

SESSIONAL MARKS : 50 (based on work related equally to 3 sections)

Sessional marks will be given on the basis of work done during the session in all the three sections. At least five works will be submitted in each section. Sessional marks shall be given by external and internal examiners jointly. In case of difference of opinion, marking may be done separately by each examiner giving marks out of 50% of the aggregate of the sessional marks.

Note :

1. Choice of option to be offered would depend on the facility available in each Institution concerned.
2. Minimum of 9 hours' teaching per week be assigned to the subjects and out of nine hours, six hours be earmarked for practical classes and three hours for theory classes (per week).

HISTORY OF ART

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : History of Indian Painting (from ca. 1800 to the present times) and Sculpture (from ca. 600 to 1300 A.D.) Max. Marks : 100

Paper-B : History of European Painting and Sculpture (from ca. 1850 A.D. onwards) and Theory and Principles of Art Appreciation. Max. Marks : 100

Paper-A : History of Indian Painting (from ca. 1800 to the present times) and Sculpture (from ca. 600 to 1300 A.D)

Max. Marks : 100

Time : 3 Hrs.

Note : s

1. The paper-setter is required to set 9 questions in all. The candidate is to attempt 5 questions as per the instructions given in the question paper.

2. The first question shall be of short answer type containing 14 questions spread over the whole syllabus. Each question is to be answered in about 25 to 30 words. It shall carry 28 marks and shall be a **Compulsory** question.

3. 8 questions are to be set from the entire syllabus consisting of 4 units. Two questions will be set from each unit and the candidates shall be given internal choice i.e. a candidate shall attempt one question from each unit. So in all, the candidate shall attempt 4 questions in all out of 8 questions. Each question would be of 18 marks.

Objectives :

The aim of the paper is to introduce to the students various schools, styles and phases of the developments in painting and sculpture in India. The emphasis will be to make them aware of the different terms, concepts, froms and subject matter of these works.

History of Indian Painting :

Unit-I

- Company painting.
- Early oil painters – Raja Ravi Verma.
- Bengal School with special reference to Abanindranath Tagore

Unit-II

- New Trends : Nandlal Bose, Rabindranath Tagore, Gaganendranath Tagore, Jamini Roy, Amrita Shergil, D.P. Roy Chowdhury, Sobha Singh, M.F. Hussain, Satish Gujral.

History of Indian Sculpture

Unit-III

- Sculptures of Pala and Sena Period – Bengal, Bihar, Orissa.

Unit-IV

- Pratihara Sculpture of Central and Western India.
- Chola Sculpture in Stone & Bronze

Pedagogy :

The students are expected to familiarize themselves with the art forms as seen from the books, slides and related films.

Suggested Readings :

1. Archer, W.G. : *India and Modern Art,* George Allen & Unwin Limited, London, 1959.
2. Archer, M. & Archer, W.G. : *Indian Painting for the British,* 1770-1880, Oxford University Press, London, 1955.
3. Chaitanya, Krishna : *A History of Indian Painting, The Modern Period,* Abhinav Publications, New Delhi, 1994.
4. Appasamy, Jaya : *Abanindranath Tagore and the Art of His Times,* Lalit Kala Akademi, New Delhi, 1968.
5. Mago, P.N. : *Contemporary Art in India,* A Perspective, National Book Trust of India, New Dehli, 2000.
6. …… : *Lalit Kala Monographs,* Lalit Kala Akademi, Delhi.
7. Journals and Periodicals : *Lalit Kala Contemporary,* Roopa-Lekha, Marg.
8. Parimoo, Ratan : *The Paintings of the Three Tagores,* Maharaja Sayajirao University, Baroda, 1973.

9. Majumdar, R.C. (editor) : *The History and Culture of Indian People,* Vol. I, II and III. (Sculpture and Painting sections only) Bhartiya Vidya Bhawan, Bombay, 1996, 1990, 1988.

10. Rowland, Benjamin : *The Art and Architecture of India,* Penguin Books, Great Britain, 1959.

11. Saraswati, S.K. : *A Survey of Indian Sculpture,* Munshiram Manoharlal Publishers Pvt. Ltd., New Delhi, 1975.

12. Aggarwala, V.S. : *Heritage of Indian Art,* Publications Division, Ministry of Information & Broadcasting, Govt. of India, New Delhi, 1976.

13. Aggarwala, V.S. : *Indian Art* (English), Varanasi, 1965.

14. Aggarwala, V.S. : *Bhartiya Kala* (Hindi), Prithvi Prakashan, 1977.

Paper-B : History of European Painting and Sculpture (from ca. 1850 A.D. onwards) and Theory and Principles of Art Appreciation.

Max. Marks : 100

Time : 3 Hrs

Note :

1. The paper-setter is required to set 9 questions in all. The candidate is to attempt 5 questions as per the instructions given in the question paper.

2. The first question shall be of short answer type containing 14 questions spread over the whole syllabus. Each question is to be answered in about 25 to 30 words. It shall carry 28 marks and shall be **Compulsory** question.

3. 8 questions are to be set from the entire syllabus consisting of 4 units. Two questions will be set from each unit and the candidates shall be given internal choice i.e. a candidate shall attempt one question from each unit. So in all, the candidate shall attempt 4 questions in all out of 8 questions. Each question would be of 18 marks.

Objectives :

The aim of the paper is to introduce to the students various schools, styles and phases of the developments in painting and sculpture in the west. The emphasis will be to make them aware of the different terms, concepts, forms and subject matter of these works.

History of European Painting and Sculpture :

Unit-I

- Impressionism – Monet, Degas, Renoir.
- Post-impressionism – Van Gogh, Cezanne, Gauguin.

Unit-II

- Cubism – Picasso, Braque.
- Expressionism – Munch, Nolde.
- Abstract Art – Kandinsky.
- Abstract Expressionism – Jackson Pollock.

Unit-III

- Function of Art.
- A brief study of Indian and Western approaches to Art.

Unit-IV

- Explanation of the term
- Form, Content, Abstraction, Modernity, Contemporaneity, Pointilism, Collage, Lithograph, Etching and Ready-made with the help of relevant examples.

Pedagogy :

The students are expected to familiarize themselves with the art forms as seen from the books, slides and related films.

Suggested Readings :

1. Janson, H.W. : *History of Art,* Thames & Hudson, London, 2001.
2. Gardener, Helen : *Art Through the Ages,* Harcourt Brace & Co., U.S.A., 1991.
3. Gombrich, E.H. : *The Story of Art,* Phaidon Press Limited, New York, 1995.
4. Arnason, H.H. : *A History of Modern Art,* Thames & Hudson, London, 1988.
5. Ray, Niharanjan : *An Approach to Indian Art,* Publication Bureau, Panjab University, Chandigarh, 1974.
6. Aggarwala,V.S. : *Heritage of Indian Art,* Publications Division, Ministry of Information & Broadcasting, Govt. of India, New Delhi, 1976.
7. Aggarwala,V.S. : *Indian Art* (English), Varanasi, 1965.
8. Aggarwala,V.S. : Bhartiya Kala (Hindi), Prithvi Prakashan, 1977.
9. Read, Herbert *Meaning of Art,* Faber & Faber, London, 1972.

ANCIENT INDIAN HISTORY, CULTURE AND ARCHAEOLOGY

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Outlines of Tests, Syllabi & Courses of Reading

Paper-A (VOCATIONAL) : EXCAVATIONS, MONUMENTS AND SCULPTURES IN STONE AND BRONZE

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Objectives :

The primary objective of this paper is to prepare the students to become professional archaeologists through the study of various excavated archaeological sites, monuments and antiquities such as stone and bronze sculptures. The study of this paper is also designed for preparing students to take higher and advanced study in the subject.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

1. The paper setter is required to set 9 questions in all. All questions shall carry equal marks.

2. The first question shall be short answer type containing 15 short questions spread over the entire syllabus. The candidate is required to answer any 9 short answer type questions. Each question shall be of 2 marks to be answered in 25-30 words each. **OR** A question on map. The map work shall consist of 12 marks for the map and 06 marks for the explanatory notes.

3. The map question shall have the following topics :
   (a) Location of important archaeological sites mentioned in Unit I.
   (b) Location of important monuments mentioned in Unit II.
   (c) Location/Provenance of important sculptures mentioned in Units III and IV.

4. The rest of the paper shall contain 4 Units. The entire syllabus has been divided into 4 Units. Each unit shall have two questions and the candidate shall be given internal choice, i.e. the candidate shall attempt one question from each unit. Each question shall carry 18 marks.

5. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper setter must put note (5) in the question paper.

Unit-I : **Excavations :** (Note : Instructions will be confined only to the location of the site and important results obtained). Kalibangan, Lothal Mitathal, Sugh, Sanghol, Inamgaon, Atranjikhera, Sisupalgarh, Nagarjunkonda.

Unit-II : **Monuments :** Asokan Pillars, Stupa of Sanchi, Rock-cut-architecture of Ajanta and Ellora, Temples of Kandariya, Mahadeo, Lingaraja, Jagannath (Puri), Konark, Hoyasalesvara (Halebid), Brihadesvara (Tanjore).

Unit-III : **Sculptures :** Stone-Harappan, Rampurva Asokan Bull, Didarganj Yakshi, Katra Buddha, Sarnath Seated Buddha, Gomatesvara at Sravanavelagola, Maheshamurti, (Elephanta), Krishna, holding Govardhana (Halebid), Sun Image of Konark, Kasia reclining Buddha (Mahaparinirvana).

Unit-IV : **Bronze :** Sultanganj Buddha, Nalanda Image of Balarama and Buddha, Kurkihar Avalokitesvara, Indra and Padmapani from Nepal, Tanjore (Chola), Nataraja, Balakrishna Kaliyadamana and Somaskanda Murti.

Pedagogy of the Course Work :

It is expected to familiarize students with brief outline of the topics with the help of visual aids like slides and transparencies. Field work trips to museums and sites may also be undertaken.

Paper-B : EPIGRAPHY AND NUMISMATICS

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Objectives :

This course makes the students aware of major scripts of Ancient India and their origin and development upto 6^{th} century A.D. Antiquity and art treasure laws are also taught. It also provides knowledge about the origin and antiquity of Punchmarked coins; tribal coins; Yaudheyas, Kunindas, Agra, Audumbaras and Malavas; Kushana and Gupta coins.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

1. The paper setter is required to set 9 questions in all. All questions shall carry equal marks.

2. The first question shall be short answer type containing 15 short questions spread over the entire syllabus. The candidate is required to answer any 9 short answer type questions. Each question shall be of 2 marks to be answered in 25-30 words each. **OR** A question on map. The question on map shall consist of the location of the sites of important inscriptions of Asoka.

3. The rest of the paper shall contain 4 Units. The entire syllabus has been divided into 4 Units. Each unit shall have two questions and the candidate shall be given internal choice i.e. the candidate will attempt one question from each unit. Each question shall carry 18 marks.

4. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.
The paper setter must put note (4) in the question paper.

Unit-I : (a) Epigraphy : Major scripts of Ancient India.
(b) Their origin and development up to 6th century A.D.

Unit-II : Rock and pillar edicts of Asoka.

Unit-III : (a) Origin and Antiquity of Punchmarked coins.
(b) Origin and date of Tribal coins : Yaudheyas, Kunindas, Agra, Audumbaras and Malavas.

Unit-IV : (a) Kushana Coins.
(b) Gupta Coins.

Pedagogy of the Course Work :

The students are to be taught with the help of slides, photographs and maps. In addition to it, special lectures, workshops, seminars, written assignments, class discussions, and term papers, should be included in the teaching work.

DEFENCE & STRATEGIC STUDIES

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

INSTRUCTIONS FOR THE PAPER SETTER AND THE STUDENTS :

1. There will be two theory papers A and B carrying 70 marks each. The internal assessment will be of 10 marks for each of the two papers. 40 marks are kept for the practical test. Each theory paper will have one compulsory short answer type question containing 15 short answer type questions of 2 marks each covering the entire syllabus. The candidate will be required to attempt any 10 short answer type questions. In addition, there will be four sections of the question paper. The candidate will be required to attempt one question from each of these sections carrying 12 ½ marks each. Each theory paper will be of three hours duration. The practical test will be of 1 ½ hours duration.

2. Practical examination will be **compulsory** for regular, correspondence and private candidates. The serving armed forces and para-military personnel will be exempted from practical examination and marks secured by such candidates out of 140 will be proportionately raised out of 200.

3. The persons appearing as private candidates (except serving armed forces and para-military personnel) shall have to complete the requirements of attending the practical at the Department of Defence & National Security Studies, Panjab University, Chandigarh in January every year, after paying the required fee as prescribed by the University from time to time. Private candidates shall have to attend practical classes for 10 hours spread over two to three days for which the certificate shall be issued by the Chairman, Department of Defence & National Security Studies, Panjab University only.

4. For reappearing candidates, who have not been assessed earlier for internal assessment and practical examination, their marks will be increased proportionately upto 100 marks for each of two papers.

Paper-A : NATIONAL SECURITY : CONCEPTIONAL ASPECTS

Max. Marks : 70
Time : 3 Hours

Objective :

This paper deals with the conceptual aspects of national security and the role of economy & military organizations in furthering national pursuits.

SECTION-I

1. *National Security :* Definition and Concept.

2. *Elements of National Security :* Geography; Mineral Resources; Economic Stability; Military Preparedness; Socio-Political Factors; Science and Technology.

SECTION-II

3. *Collective Security Arrangements :* Security Relevance of UN in the modern context; Role of NATO in the Post Cold War era.

SECTION-III

4. *Regional Groupings :* SAARC, ASEAN and BIMSTEC (Aims and Objectives of the three Alliances to be discussed).

SECTION-IV

5. *Non-aligned Movement and National Security :* History, Features, Problems and Achievements.

Books Recommended :

1. Hans, J. Margenthau : *Politics Among Nations.*
2. Abhyankar, M.G. : *Defence Principles and Organisation.*
3. Aditya, Chibber : *National Security Doctrine.*
4. Alva, Myrdal : *The Game of Disarmament.*
5. Hadley, Arthur, I. : *The National Safety and Arms Control.*
6. Bandhyopadhyay, J. : *India's Foreign Policy Making.*
7. Choudhary, Subrata Roy : *Military Alliances and Neutrality in War and Peace.*
8. Shah, A.B. : *India's Defence and Foreign Policies.*
9. Misra, K.P. : *Studies in Indian Foreign Policy.*
10. Rana, A.P. : *The Imperative of Non-Alignment.*
11. Jasbir Singh : *Indian Defence Year Book, 2001.*

Paper-B : NATIONAL SECURITY OF INDIA

Max. Marks : 70

Time : 3 Hours

Objective : This paper covers the various factors related to National Security in India.

SECTION-I

1. India's security problems since 1947 :
   (a) Geo-political effects of partition – boundaries and frontiers.
   (b) Integration of States : J. & K., Junagarh, Hyderabad and Goa.
   (c) Security problems related to Pakistan and China with particular reference to 1947, 1965, 1971 and 1999 Indo-Pak Wars; 1962 Sino-Indian War and subsequent developments.

SECTION-II

2. Indian Ocean and India's Maritime Security.
3. Role of Air Warfare—India's perspective.
4. Nuclear Policy of India : History, Evolution, Policy options.

SECTION-III

5. Internal Dimension of India's National Security with particular reference to Insurgency, Terrorism and Low Intensity Conflict. Role of Para-Military Forces.
6. *Civil Defence :* Aims, Objectives & Means.

SECTION-IV

7. Economic Mobilization for National Defence.
8. Planning and Production for National Defence with particular reference to India's Defence Production and DRDO.

Books Recommended :

1. Kavic, L.J. : *India's Quest for Security.*
2. Subrahmanyam, K. : (i) *National Security Perspectives.*
   (ii) *Planning for Defence.*

3.	Khera, S.S.	:	*India's Defence Problems.*
4.	Panikkar, K.M.	:	(i) *Defence Problems of India.* (ii) *India and the Indian Ocean.*
5.	Rao, Rama	:	(i) *Self Reliance and Security.* (ii) *Role of Defence Production.* (iii) *Atom for Peace.*
6.	Rao, PVR	:	*Defence Without Drift.*
7.	Chopra, Maharaj, K.	:	*India the Search for Power, India and the Indian Ocean.*
8.	Thomas, Raju, G.C.	:	*The Defence of India (A Budgetary Perspectives).*
9.	Cohen, Stephen, P.	:	*The Indian Army.*
10.	Kohli, S.N.	:	*Sea Power in the Indian Ocean.*
11.	Klaus, Knorr	:	*War Potential of the Nation.*
12.	Pathak, K.K.	:	*Nuclear Policy of India.*
13.	Kaul, Ravi	:	*India's Strategic Spectrum.*
14.	Barnawal, S.P.	:	*Military Year Book (Latest).*
15.	Singh, Jasbir	:	*Defence Year Book, 2001.*
16.	Singh, Gurbax	:	*You and Civil Defence.*
17.	Misra, R.N.	:	*Indian Ocean and India's Security.*
18.	Singh, Bhupinder	:	*Textbook of Defence Studies (Part III Punjabi).*
19.	Sidhu, K.S.	:	*Area Studies of Pakistan (Punjabi).*
20.	Singh, Jasjit	:	*Nuclear India.*
21.	--do--	:	*Role of Air Power in the 1990's.*
22.	Singh, Jaswant	:	*Defending India.*

Paper –C : PRACTICAL

Total Marks : 40
Time : 1-1/2 Hours

Note :

1. Practical Examination will be compulsory for regular, private and correspondence students.
2. There will be five questions in all and candidates will be required to attempt any three questions of ten marks each.
3. Examiners are required to set the question paper atleast half an hour before the examination.
4. There will be 3 hours of teaching per week for practical.
5. For practical classes the number of students in one group shall not exceed fifteen.
6. Practical exercises should be carried out on drawing sheets with explanatory notes or on computer.

SECTION–A : Practical Test : 30 Marks

1. Relief features and their representation on map.
2. Degree of slopes, gradients and inter visibility of points.
3. Study of field craft with reference to the following :
   (a) Ground
   (b) Cover
   (c) Camouflage
   (d) Observation
4. Tactical Formations : Section and Platoon.
5. Application of Fire : Fire control, fire control orders and sequence of fire control orders.
6. Military Messages : Verbal and written.

SECTION–B : Practical Record : 5 Marks

SECTION–C : Viva-Voce : 5 Marks

HISTORY

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

INSTRUCTIONS FOR THE PAPER-SETTERS AND CANDIDATES (For papers A & B) :

1. *The syllabus has been divided into four units.*
   There shall be **9** questions in all. The first question is **compulsory** and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any **9** short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain **4** units. Each unit shall have **two** essay type questions and the candidate shall be given internal choice of attempting one question from each Unit – 4 in all. Each question will carry 18 marks.

2. For the private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper-setter must put note (2) in the question paper.

3. One question from Unit IV shall be set on the map.

Explanation :

1. Each essay type question would cover about one-third to one half of a topic detailed in the syllabus.

2. The distribution of marks of the map question would be as under :

   Map : 10 marks

   Explanatory Note : 08 marks

   Note : In case, a paper-setter chooses to set a question of map on important historical places, the paper-setter will be required to ask the students to mark 10 places on map of 1 mark each and write explanatory note on any four of 2 marks each.

3. The paper-setter would avoid repetition between different types of questions within one question paper.

Paper A : WORLD HISTORY 1500-1870 A.D.

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hrs.

Objectives : To introduce the students to the history of the Modern World

Pedagogy : Lectures, library work and discussions.

Unit-I

1. *World Around 1500 :* Polity; Economy; Society.
2. *Rise of Absolute State :* France and Prussia.
3. *Rise of Parliamentary Government :* The Glorious Revolution and its effects.

Unit-II

4. *The American Revolution :* Its social, political and economic causes; its consequences.
5. *The French Revolution :* Causes and impact of the French Revolution.
6. *Napoleon Bonapart :* Reforms of Napoleon Bonapart; his continental system.

Unit-III

7. *Congress of Vienna (1815) :* Motives, working, principles, provisions and significance of Congress of Vienna.
8. *The Industrial Era :* The Industrial Revolution (1750-1850); causes for its origins in England; New inventions; spread to Europe; impact on society.
9. *Eastern Question :* Greek War of Independence; Mehmat Ali and Egypt; Crimean War.

Unit-IV

10. *Unification of Italy :* Different stages in unification of Italy; role of Mazzini, Cavour and Garibaldi.
11. *Unification of Germany :* Rise of Nationalism and role of Bismarck in the unification of Germany.
12. *Map :*
    - (a) *Important Places :* Paris, London, Rome, Berlin, Frankfurt, Vienna, Waterloo, Moscow, New York, Creamea, Traflgar, Venice, Bonn and Budapest.
    - (b) Unification of Germany.
    - (c) Unification of Italy.

Suggested Readings :

1. Davis, H.A. : *An Outline History of The World,* OUP, 1964, 4th Edition.
2. Garraty John A. & Peter Gay (ed.) : *The University History of the World,* United Kingdom : New Orchard Edition, 1985.

3. Gupta, P.S. : *Adhunik Paschim Ka Uday,* Hindi Madhyam Karanvaya Nideshalaya, Dilli : Dilli Vishavidhalaya, 1997 (Hindi Medium).

4. Gupta, P.S. : *Europe Ka Itihas,* Hindi Madhyam Karanvaya Nideshalaya, Dilli : Dilli Vishavidhalaya, 1996 (Hindi Medium).

5. Hinsley, F.H. (ed.) : *Material Progress and World Wide Problems, 1870-1898,* Cambridge University Press, 1976.

6. Stavrianos, L.S. : *The World Since 1500,* Delhi : Prentice Hall of India, 1965.

Paper B : WORLD HISTORY (1871 to 1956 A.D.)

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hrs.

Objectives : To introduce the students to the history of the Modern World in the period of European Domination.

Pedagogy : Lectures, library work and discussions.

Unit-I

1. *New Imperialism 1871-1914 :* Main features; Partition of Africa – Causes, colonization and impact.

2. *Congress of Berlin :* Circumstances, provisions and significance of the Congress of Berlin 1878.

3. *Diplomatic Developments in Europe :* Circumstances leading to the formation of Triple Alliance of 1882 and Triple Entente.

Unit-II

4. *World War I :* Division of Europe into two blocks; causes of the First World War.

5. *Paris Peace Conference :* Treaty of Versailles 1919; Provisions, major defects and their impact.

6. *Russian Revolution :* Causes and impact of the Russian Revolution of 1917.

Unit-III

7. *Nationalism and Communism in China :* Causes for the nationalist revolution of 1911 and its results; circumstances leading to the revolution of 1949 and its results.

8. *Modernization in Japan :* Meji restoration and modernization in Japan.

9. *The Great Depression of 1929 :* Causes of the Great Depression in the USA; its spread to Germany, France and Britain; its impact; Roosevelt's New Deal.

Unit-IV

10. *Fascism and Nazism :* Circumstances responsible for rise of Fascism under Mussolini in Italy; Nazism in Germany under Adolf Hitler.

11. *World War :* Causes responsible for the Second World War; Modernization of Turkey under Mastafa Kamal Pasha.

12. *Map :*
    (a) *Important Places :* Geneva, Washington, Tokyo, Versailles, Constantinople, Peking, Beijing, Manchuria, Nanking, Frankfurt, Johannesberg, Cairo, Jerusalem, Nagasaki, Warsaw and Stalinguard.
    (b) Europe on the eve of World War I.
    (c) Europe on the eve of World War II.

Suggested Readings :

1. Ashworth, W. : *A Short History of the International Economy, 1850-1950,* London : Longmans, 1954.
2. Brecher, Michael : *The Foreign Policy System of Israel, Toronto* : Oxford University Press, 1972.
3. Chabod, Fredrico : *History of Italian Fascism,* London : Weidenfeld, 1961.
4. Gupta, P.S. : *Adhunik Paschim Ka Uday,* Hindi Madhyam Karanvaya Nideshalaya, Dilli : Dilli Vishavidhalaya, 1997 (Hindi Medium).
5. Gupta, P.S. : *Europe Ka Itihas,* Hindi Madhyam Karanvaya Nideshalaya, Dilli : Dilli Vishavidhalaya, 1996 (Hindi Medium).
6. Garraty John, A. & Peter Gay (ed.) : *The Columbia History of the World,* United Kingdom : New Orchard Edition, 1985.

POLITICAL SCIENCE

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A : COMPARATIVE POLITICAL SYSTEMS (UK AND USA)

Max. Marks	:	100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objectives :

The purpose of this paper is to serve as an introduction to the field of comparative politics. It provides a broad overview of the field of comparative politics and examines some key approaches. The major part of the paper is devoted to understanding and analyzing the origins and working of two political systems, the UK and the USA. The student will not only become familiar with the working of these two political systems but also understand how the concepts of comparative politics can be used to understand real world politics.

GENERAL INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

1. *The syllabus has been divided into four units :*
   There shall be **9** questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each unit shall have two essay type questions, and the candidate shall be given internal choice of attempting one question from each Unit – 4 in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.
   The paper setter must put note (2) in the question paper.

Unit-I : Theoretical Framework

(i) Meaning, Nature and Scope of Comparative Government and Politics.

(ii) Comparative Method.

Unit-II : U.K.

(iii) The British Political tradition.

(iv) Parliamentary Government, Monarchy, Cabinet, Parliament.

(v) Judicial System and Rule of Law.

Unit-III : U.S.A.

(vi) Evolution of American political system - War of Independence, Framing of the Constitution, Bill of Rights.

(vii) The Constitutional Framework.

(viii) Federal System.

Unit-IV

(ix) Political Parties and Interest Groups of U.K.

(x) Political Parties and Interest Groups of U.S.A.

Books Recommended :

1. J.C. Johari : *Major Modern Political Systems,* Vishal Publication, Delhi.
2. J.C. Johari : *Comparative Politics,* Sterling Publishers, New Delhi.
3. A.C. Kapoor : *Select Constitutions,* S. Chand and Company, New Delhi.
4. V.N. Khanna : *Comparative Study of Government and Politics,* S. Chand and Comp., New Delhi.
5. Vishnu Bhagwan and Vidya Bhushan : *World Constitutions,* Sterling Publisher, New Delhi.
6. K.R. Bombwall : *Major Contemporary Constitutional Systems,* Modern Publication, Ambala Cantt.
7. H.S. Deol : *Adhunik Sarkrana* (Punjabi) Publication Bureau, Punjabi University, Patiala.
8. Andrew Heywood : *Politics,* Macmillan Palgrave, New York, 1997.
9. Mackintosh : *The Government and Politics of Britain,* Hutchinson and Comp., London, 1977.
10. C.O. Johnson : *Government in the United States,* any edition, New Delhi.
11. Herman Finer : *Theory and Practice of Modern Government,* Theuen and Comp., London, 1963.
12. Hague and Harrop : *Comparative Government and Politics,* Palgrave, New York, 2001.

Paper-B : INTERNATIONAL POLITICS : THEORY AND PRACTICE

Max. Marks		: 100
Theory	:	90 Marks
Internal Assessment	:	10 Marks
Time	:	3 Hours

Objectives :

This paper provides students with an overview of the broad theories and concepts used to understand international politics. It also examines key issues in contemporary global history from an international politics perspective.

GENERAL INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

1. *The syllabus has been divided into four units :*
   There shall be **9** questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each unit shall have two essay type questions, and the candidate shall be given internal choice of attempting one question from each Unit – 4 in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.
   The paper setter mut pust note (2) in the question paper.

Unit-I

1. Meaning, Nature and Scope of International Politics.
2. Realist and Idealist approaches to International Politics.

Unit-II

3. National Power : Its Elements.
4. System of Balance of Power and Collective Security.

Unit-III

5. Cold War and Post Cold War era of International Politics.
6. Bipolar, Unipolar and Nature of Emerging World Order.

Unit-IV

7. United Nations : Aims, Objectives and Principles.

8. Regional Organisations : SAARC and EU.

9. New International Economic Order (NIEO).

Recommended Books :

1. H. Bull, *The Anarchical Society : A Study of Order in World Politics,* London, Macmillan.

2. E.H. Carr, *The Twenty Year Crisis,* London, Macmillan, 1939.

3. –do--, *Conditions of Peace,* New York, The Macmillan Company, 1944.

4. J. Frankel, *The Making of Foreign Policy,* London, Oxford University Press, 1963.

5. S.H. Hoffman (ed.), *Contemporary Theory in International Relations,* Massachusetts, Addison-Wesley, 1979.

6. A. Hurell, "Collective Security and International Order Revision", *International Relations*, Vol. II, No. 1, April.

7. H.J. Morgenthau, *Politics Among Nations : The Struggle for Power and Peace*, 6th Edn., revised by K.W. Thompson, New York, Alfred Knopf, 1985.

8. N.D. Palmer and H. Perkins, *International Relations,* Calcutta Scientific Book Company, 1971.

9. A. Roberts, The UN and International Security*, Survival*, Vol. 35, No. 1, Spring.

10. S.P. Verma, *International System and the Third World,* New Delhi, Vikas, 1988.

11. John Baylis and Steve Smith, *The Globalisation of World Politics,* OUP, Oxford, 2001.

ECONOMICS

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper – A : ECONOMICS OF DEVELOPMENT

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Course Objective :

The primary course objective is to introduce the students to the basic features, determinants, and theories and strategies of development of underdeveloped economies. It also introduces students to the theory of how control and direction of economic activity by a central public authority can be used as an alternative to market by the underdeveloped economies.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 09 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

Unit-I

Economic Growth and Development. Main Features of an Underdeveloped Economy.

Determinants of Economic Development. Capital Formation : Its Source, Nurkse's Thesis of Disguised Unemployment. Lewis Theory of Unlimited Supply of Labour.

Unit-II

Dualism : Social and Technological. Classical Model of Growth; Harrod Domar Model of Economic Growth; One Sector Neo-classical Model of Growth.

Unit-III

Strategies of Economic Development : Balanced Vs. Unbalanced Growth. Leibenstein's Critical Minimum Effect Thesis. Theory of Big Push. Rostow's Theory of Stages of Growth.

Unit-IV

Theory of Planning in Developing Countries : Need, Objectives, Strategies and Problems of Planning, Price Mechanism and Planning. Investment Criteria. Choice of Technique. Export Promotion and Import Substitution Strategy.

Books Recommended :

1. G. M. Meier (Eds.) : *Leading Issues in Economic Development,* Oxford University Press, New York, 1995.
2. W. W. Rostow : *Stages of Economic Growth,* Cambridge University Press.
3. Benjamin Higgins : *Economic Development : Principles, Problems and Policies,* Universal Book Stall, New Delhi, 1994.
4. G. M. Meier and James E. Rauch : (Eds.) : *Leading Issues in Economic Development,* Seventh Edition, Oxford University Press.
5. R. Nurkse : *Problems of Capital Formation in Underdeveloped Countries,* Oxford University Press.

Supplementary Readings :

Michael Todaro : Economic Development in the Third World, Orient Longman, London.

Note : Four to Five lectures of 45 minutes each per week are required to complete the syllabi.

Paper–B : QUANTITATIVE METHODS

Max. Marks		: 100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Course Objective :

The objective of the course is to train the students in the use of basic mathematical and statistical tools in analyzing various economic phenomenons. It deals with the design of how data is presented, the analysis of the data, and the drawing of conclusions from the data. The course aims to improve decision-making accuracy of the students and enabling them to test new ideas.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

1. There shall be **9** questions in all. All questions carry equal marks. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 09 short answer type questions i.e. 2 marks of each. It shall carry 18 marks and shall be **compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all.

2. Use of simple calculator is allowed.

3. The paper setter may in general stick to the distribution of marks of 1/3 to theory and 2/3 to numericals.

Unit-I

Elementary Idea of Sets and Function : Simple, Derivative, Differentiation of Simple functions – Polynomial (x), Exponential functions. Maxima and Minima of functions of one variable only. Simple Application of Economics.

Unit-II

Matrices : Definition and Types, Operations (Sum, Difference, Product and Transpose), Adjoint and Inverse of a matrix (upto 3×3), Solution of Equations (upto 3) by Matrix Methods and Crammer's rule.

Measures of Central Tendency : Mean, Median, Partition Values, Mode, Measures of Dispersion, Skewness.

Unit-III

Correlation Analysis—Karl Pearson's (except grouped data) and Spearman's formula, Simple Regression Analysis.

Interpolation – Binomial, Expansion, Newton's (Advancing Difference Method) and Lagrange's Method.

Unit-IV

Index Numbers : Concepts, Problems and Importance; Simple Index Number, Lespeyre's and Fisher's Index Numbers only (among weighted index numbers), Reversibility Tests.

Time Series Analysis : Components of Time Series, Determination of Trend, Least Square and Moving Average Method.

Books Recommended :

1. Archibald, G. C. and Lipsey, R. G. : *An Introduction to a Mathematical Treatment of Economics,* 1977, English Language Book Society, Weidenfeld and Nicolson.

2. Sanchati, D. C. & Kapoor, V. K. : *Business Mathematics,* Sultan Chand & Sons, 1993, New Delhi.

3. Gupta, S. C. : *Fundamentals of Statistics,* Mumbai, Himalaya Publishing House.

Note : Four to Five lectures of 45 minutes each per week are required to complete the syllabi.

SOCIOLOGY

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper–A : SOCIETY IN INDIA

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Objective :

The focus of this paper is to present a comprehensive view of Indian Society. The students are exposed to the tribal, rural and urban societies and are presented with the social structure and social institutions to understand these segments of Indian Society. Through this paper, the students are also introduced to the problems of the underprivileged in Indian Society.

INSTRUCTIONS FOR THE PAPER SETTER AND THE CANDIDATES :

(i) For written paper, the students will be required to attempt **five** questions in all. Question No. 1 will be **compulsory** comprising of 12 short answer type questions of 2 marks each and will cover the entire syllabus. The students are required to attempt **nine** short answer type questions out of 12 i.e. $9 \times 2 = 18$ marks.

In addition to it, Question Nos. II to IX will consist of long answer (essay type) questions, two questions from each unit with internal choice carrying 18 marks each i.e. $4 \times 18 = 72$ marks.

(ii) On an average, 15 hours are to be devoted to each unit.

(iii) For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

The paper–setter must put note (iii) in the question paper.

Course Content :

Unit-I

Tribal Society : Meaning, Characteristics; Classification of tribes.

Institutional Features: Family, Marriage, Economy and Changing trends.

Unit-II

Rural Society : Meaning; Characteristics.

Institutional Features : Family, Marriage; Economy and Polity (Village Panchayat); Changing Trends.

Unit-III

Urban Society : Meaning and characteristics, Concepts of urbanization and urbanism; Institutional features; Urban family - features and changes; Economy; Voluntary associations; Slums.

Unit-IV

Under-privileged Sections—Women, Scheduled Castes; Scheduled Tribes and the Disabled; their Disabilities and measures to improve their status.

Essential Readings :

1. Bose, N.K. (1980) : *Tribal Life in India,* National Book Trust.
2. Desai, A.R. (1969) : *Rural Sociology in India,* Bombay : Popular Prakashan.
3. Lal, S.N. & Nahar, U.R. (1992) : *Rural Social Transformations,* Jaipur : Rawat.
4. Madan & Majumdar (1989) : *An Introduction to Social Anthropology,* New Delhi : National Publications (Hindi & English).
5. Madhurima (2009) : *Readings in Sociology-Part-3*, Jalandhar : New Academic Publishing House [All Mediums].
6. Mandelbaum, G. (1970) : *Society in India,* Bombay : Popular Prakashan (Hindi & English).
7. Shah, Ghanshyam (ed.) (2002) : *Caste & Democratic Politics in India,* New Delhi : Permanent Black.
8. Sharma, R.K. (1997) : *Indian Society : Institutions & Change,* New Delhi : Atlantic Publications.
9. Singh, K.S. (2002) : *The Scheduled Castes*, New Delhi : Oxford University Press.

Further Readings :

1. Ahuja, Ram (1981) : *Social Problems in India,* Ghaziabad, Vikas Publications.
2. Mahajan, Sanjeev (2004) : *Gramin Samajshastra,* New Delhi : Arjun Publishing House.
3. Punit, A.E. (1978) : *Social Systems in Rural India,* New Delhi : Sterling Publications.

4. Rao, M.S., Chandrashekar Bhatt, L.N. Kelkar (eds.) (1991) : *A Reader in Urban Sociology,* New Delhi : Orient Longman.

5. Shah, D.S. & Sisodia, Y.S. (ed.) (2004) : *Tribal Issues in India,* Jaipur : Rawat Publications.

6. Singh, K. Suresh (2001) : *The Scheduled Tribes,* New Delhi : Oxford University Press.

7. Vardhan, Ranjay (2008) : *Single Women : A Study of Spinsters*, Delhi : Indian Publishers Distributors.

Paper-B : DISORGANISATION AND EMERGING PROBLEMS

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Objective :

This paper exposes the students to social disorganization, its levels and current problems. It helps students to understand social realities and also equips them to utilize their knowledge in various theoretical and practical exercises.

INSTRUCTIONS FOR THE PAPER SETTER AND THE CANDIDATES :

(i) For written paper, the students will be required to attempt **five** questions in all. Question No. 1 will be **compulsory** comprising of 12 short answer type questions of 2 marks each and will cover the entire syllabus. The students are required to attempt **nine** short answer type questions out of 12 i.e. $9 \times 2 = 18$ marks.

In addition to it, Question Nos. II to IX will consist of long answer (essay type) questions, two questions from each unit with internal choice carrying 18 marks each i.e. $4 \times 18 = 72$ marks.

(ii) On an average, 15 hours are to be devoted to each unit.

(iii) For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

The paper-setter must put note (iii) in the question paper.

Unit-I

Social Disorganization : Concepts and Levels –Personal, Familial and Societal .

Unit-II

Personal Problems : Problems of Adolescence; Alcoholism; Drug Addiction, Suicide.

Unit-III

Familial Problems : Domestic Violence, Violence against Children; Female Headed Households; Problems of Working Women.

Unit-IV

Societal Problems : Poverty; Corruption; Communal Conflicts, Problems of the Aged.

Essential Readings :

1. Ahuja, Ram (1981) : *Social Problems in India,* Ghaziabad : Vikas Publications.
2. Elliot, H.V. & Merill, F. (1950) : *Social Disorganization,* New York : Harper Brothers.
3. Gill, S.S. (1998) : *Pathology of Corruption,* New Delhi : Harper Collins.
4. Macionis, John J. (2005) : *Social Problems,* New York : Prentice Hall.
5. Madan, G.R. (1978) : *Indian Social Problems,* New Delhi : Allied Publishers.
6. Mitra, S.M. (2005) : *Indian Problems,* New Delhi : Eastern Book Corporation.
7. Mohan, J. & Sehgal, M. (2004) : *Youth & Drugs,* New Delhi : Abhijit Publications.
8. Narasaiah, M.L. (2005) : *Poverty & Environment,* New Delhi : Discovery Publishing House.
9. Rai, Bhartiya (2004) : *Samajik Samasyaein,* New Delhi : Arjun Publishing House.
10. Vardhan, Ranjay (1999) *Female Headed Households in Patriarchal Society : A Sociological Study,* Delhi : Indian Publishers Distributors.

Further Readings :

1. Chakraborty, Rajgopal Dhar (2004) : *The Greying of India : Population, Ageing in the Context of Asia,* New Delhi : Sage.

2. Mahajan, Amarjit & Madhurima (1994) : *Family Violence and Abuse in India,* New Delhi : Deep and Deep Publications.

3. Natrajan, P.S. (2003) : "A Theory of Indian Communalism" in *Think India Quarterly,* Vol. 6, No. 3, July-Sept.

4. Pavrala, Vinod (1996) : *Interpreting Corruption,* New Delhi : Sage.

5. Phandaris, Urmila (1989) : *Ethnicity and Nation Building in South Asia,* New Delhi : Sage.

6. Shankar Rao, C.N. (2007) : *Indian Society,* Delhi : S. Chand and Company.

PUBLIC ADMINISTRATION

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper–A : LOCAL GOVERNMENT (With Special Reference to Punjab)

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Objective of the Paper :

The paper attempts to familiarize the students with various aspects of Local Government which traditionally has been the core area of Public Administration. The syllabi of the course have been so structured so as to cover the latest constitutional amendements as well as control over the local bodies.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

1. For Private/University School of Open Learning students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

   The paper-setter must put a note in question paper in this regard.

2. The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The compulsory question shall comprise of 12 short answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

Unit-I

Meaning and Significance of Local Government.

Evolution of Local Government since 1882.

Role of Deputy Commissioner.

Role of Divisional Commissioner.

Unit-II

The 73rd Constitutional Amendment–Provisions and its impact.

Gram Sabha – Composition, Functions and Powers.

Panchayati Raj Institutions in Punjab – Structure, Functions, Sources of Finances and Personnels.

Unit-III

The 74th Constitutional Amendment –Provisions and its Impact.

Urban Local Bodies –Structure, Functions, and Sources of Finance.

Mayor – Position, Functions and Powers.

Municipal Commissioner – Position, Functions and Powers.

Unit-IV

State Control over Local Bodies.

State Finance Commission : Composition, Functions and Role.

Provincialisation of Municipal Services.

Rural–Urban Relationship – Challenges and Remedies.

Essential Readings :

1. Maheshwari, S.R. : *Local Government in India* (Agra : L.N. Aggarwal, 2002).
2. Singh, Sahib & Singh, Swinder : *Local Government in India* (Jalandhar, New Academic Publishers, 2000).
3. Puri, K.K. & Barara, G.S. : *Local Government in India* (Jalandhar : Bharat Prakashan).
4. Goel, S.L. & Shalini, Ramesh : *Panchayati Raj in India* (New Delhi : Deep & Deep, Publishers, 2003).

Further Readings :

1. Khanna, B.S. : *Rural Developments in South Asia* (New Delhi : Deep & Deep Publications, 1991.
2. Singh, H.B. : *Revitalised Urban Administration in India* (Delhi : Kalpaz Publishers, 2003).

Paper–B : DEVELOPMENT ADMINISTRATION (With Special Reference to Punjab)

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Objective of the Paper :

Development Administration for the past many years has been the focal area of study and research in the discipline of Public Administration. The course content of this paper has been so organized so as to cover important aspects of Development Administration namely Planning Machinery at the Centre and State levels, Public Enterprises and the administrative setup of a few related organizations at the union level.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

1. For Private/University School of Open Learning students, who have not been assessed earlier for the internal assessment, the marks secured by them in the paper will proportionately be increased in lieu of the internal assessment.

   The paper-setter must put a note in question paper in this regard.

2. The candidate shall attempt 5 questions in all (one compulsory and one each from four units). The compulsory question shall comprise of 12 short-answer type questions, covering the whole syllabus, to be answered in 25-30 words each, out of which the candidate would be required to attempt any 9. Each question will carry 2 marks. Rest of the paper shall contain 4 units, each unit having two questions, out of which the candidate would be required to attempt one. Each question will carry 18 marks.

Unit-I

Development – Meaning, Features and Aspects.

Development Administration : Meaning, Nature, Scope and Significance.

Features of developed and developing countries.

Unit-II

Planning : Meaning, Objectives and Significance.

Planning Machinery : Centre and State Level.

India as a Welfare State.

Unit-III

Public Enterprises : Concept and Forms.

Role of Public Enterprises in Economic Development.

Problems of Public Enterprises.

Unit-IV

Union Ministry of Human Resource Development–Organisation and functions.

University Grants Commission—Composition and functions.

Union Ministry of Health and Family Welfare–Organisation and functions.

Essential Readings :

1. Singh, Sahib and Singh, Swinder : *Public Administration : Development and Local Administration* (Jalandhar : New Academic Publishers).
2. Mathur, B.P. : *Public Enterprise Management* (Macmillan India : New Delhi, 1999).
3. Sapru, R.K. : *Development Administration* (New Delhi : Sterling Publishers, 2nd Edition, 2003).

Further Readings :

1. Rattan, Vijay : *Women and Child Development Programme Administration* (New Delhi : S. Chand, 1997).
2. Jain, R.B. : *Public Administration in India – 21st Century Challenges for Good Governance* (Delhi : Deep & Deep Publications Pvt. Ltd., 2002).
3. Srivastava, S.P. (ed.) : *The Development Debate : Critical Perspectives* (Jaipur & New Delhi : Rawat Publications, 1998).
4. Indian Development Report, 2002 Parikh, S. and Radhakrishna, R. (eds.) : *Indira Gandhi Institute of Development Research* (New Delhi : Oxford University Press, 2002).
5. Goel, S.L. : *Advanced Public Administration* (New Delhi : Deep & Deep Publications, 2003).

PHILOSOPHY

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Outlines of tests, syllabi and courses of reading

Paper –I : INDIAN EPISTEMOLOGY AND METAPHYSICS

Max. Marks		: 100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours
Lectures	:	75

Aims and Objectives :

This paper discusses the main epistemological and metaphysical issues as discussed in the various Indian Philosophical Systems.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

1. There shall be **9** questions in all. The first question is **compulsory** and shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any **9** short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain **4** units. Each unit shall have **two** essay type questions and the candidate shall be given internal choice of attempting one question from each unit – 4 in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper setter must put note (2) in the question paper.

Unit–I

1. Salient features of Indian Epistemology and Metaphysics.
2. Concept of Prama, Prameya and Pramana with special reference to Nyaya.

Unit–II

3. Pramanas : General account of Pratyaksa, Anumana, Sabda, Upmana, Arthapatti and Anupalabdhi.

Unit–III

4. Materialism of Charvakas.
5. Padarthas of Vaisesika.
6. Anekantavada of Jainism.

Unit–IV

7. Concept of Self and Consciousness with special reference to Mandukya Upanishads.
8. Advaita Vedanta : Sankara on Brahman, Adhyasa.
9. The Nature of Ultimate Reality, Man and the World :
   (i) Samkhya.
   (ii) Buddhism.
   (iii) Sikhism.

Essential Readings :

1. Hiriyanna, M. : *Outlines of Indian Philosophy* (Allen and Unwin, London, 1999) (Hindi Translation Available), London : Allen.
2. Chatterjee, S.C. & Datta, D.M. : *An Introduction to Indian Philosophy* (Calcutta University, Calcutta, 1993).
3. Tarka-Samgraha of Annambhatta (Poona-Bhandarkar Oriental Research Institute, Poone, 1992).

Further Readings :

1. Chatterjee, S.C. : *The Nyaya Theory of Knowledge* (University of Calcutta, Calcutta, 1995).
2. Panchapagesha Sastri : *The Philosophy of Aesthetic Pleasure* (Annamalai University, 1999).
3. Complete Works of Swami Vivekananda (relevant portions), (Advaita Ashram, Calcutta).
4. Ananikana : *A Nyaya Manual,* Ed. Sri. Krishna Sarma, Adyar Library and Research, Chennai, 1991.

Paper–II : WESTERN EPISTEMOLOGY AND METAPHYSICS

Max. Marks		: 100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours
Lectures	:	75

Aims and Objectives :

This paper aims at exposing the students to main epistemological and metaphysical theories and problems of western philosophy. It also deals with basic themes of existentialism, logical positivism and analytical philosophy.

INSTRUCTIONS FOR THE PAPER-SETTER AND CANDIDATES :

The syllabus has been divided into four units.

1. There shall be **9** questions in all. The first question is **compulsory** and shall be short answer type containing 15 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any **9** short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain **4** units. Each unit shall have **two** essay type questions and the candidates shall be given internal choice of attempting one question from each unit – 4 in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper setter must put note (2) in the question paper.

Unit-I

1. Nature of Philosophy with special reference to Metaphysics and Epistemology (introductory).
2. *Materialism :* Mechanical and Dialectical.
3. *Idealism :* Objective (Plato), Subjective (Berkeley).

Unit-II

4. *Nature of Knowledge :* Knowing subject, Act of knowing and object of Knowledge.
5. *Theories of Truth :*
   (a) Coherence.
   (b) Correspondence.
   (c) Pragmatic.

Unit-III

6. *Theories of Knowledge :*
   (a) Rationalism.
   (b) Empiricism.
   (c) Transcendentalism of Kant.

Unit-IV

7. Universal and Particulars : Concept of Being (Parmenides) and Becoming (Heraclites).
8. Substance (Spinoza) Causality (Hume).
9. Existentialism : Being in itself; Being for itself; Choice and Freedom.

Essential Readings :

1. Ewing, A.C. : *Fundamental Questions of Philosophy* (London : Routledge & Kegan Paul, 1999).
2. Titus, H.H. : *Living Issues in Philosophy,* Prentice Hall Pub. (New Delhi : Eurasia Pub. House, 4th ed., 1999).
3. Macquire, John : *Existentialism, Philosophical Library,* New York, 1949.

Further Readings :

1. Korner, Stephen : *Fundamental Questions of Philosophy* (Penguin), Harmondsworth, 2002.
2. Ayer, A.J. : *Twentieth Century Philosophy,* Penguin Books, Harmondsworth, 2002.
3. --do-- : *Language, Truth and Logic, Soft Cover ISBN 0486200108,* Dover Publications, 1969.

PSYCHOLOGY

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Objectives :

(I) This course will enable the students to get an introductory knowledge about abnormal psychology with emphasis on the dynamics of some of the behavioural disorders and therapies. Students will also have some knowledge about stress and coping; and will get acquainted with elementary inferential statistics.

(II) Pedagogy of the Course Work :

80 % Lectures (including expert lectures).

20% assignments, discussion and seminars.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES :

The syllabus has been divided into four units.

(a) There shall be **9** questions in all. First question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 7 short answer type questions i.e. 2 marks of each. It shall carry 14 marks and shall be **compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all with 14 marks for each.

(b) For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

The paper setter must put note (b) in the question paper.

(c) The practical will be of 40 marks.

Paper A : ABNORMAL PSYCHOLOGY

Theory	:	70 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

UNIT-I : *Viewpoints Regarding Abnormality :* Historical, Psychodynamic, Behavioural, Cognitive Behavioural, Humanistics and Interpersonal; Current Classifications of Abnormality.

UNIT-II : *Stress :* Concept of Stress; Categories of Stressors; Dynamics of Stress; Coping Strategies—Task Oriented and Defence Oriented Responses.

UNIT-III : *Causes of Abnormal Behaviour :* Biological, Psychological and Sociocultural Causes.

UNIT-IV : *Significance of Statistics :* Mean, Standard Deviation, Correlation.
Significance of Difference Between Means (Correlated and Uncorrelated).

Note : The use of non-programmable calculators and statistical tables is allowed in the examination.

Paper B : BEHAVIOURAL DISORDERS

Theory	:	70 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

UNIT-I : Anxiety Based Disorders, Conversion Disorders, Dissociative Disorders : Types, Symptoms and Etiology.

UNIT-II : *Mood Disorders :* Types, Symptoms and Etiology.

UNIT-III : *Schizophrenia and Delusional Disorders :* Types, Symptoms and Etiology.

UNIT-IV : *Psychotherapies :* Psychodynamic Therapy, Behavioural Therapy, Cognitive-Behaviour Therapy, Humanistic Therapy.

PSYCHOLOGY PRACTICALS

Max. Marks : 40
Time : 3 Hours.

Eight practicals have to be performed out of the following :

1. Interview.
2. TAT.
3. Depression Inventory.
4. Locus of Control.
5. The use of Biofeedback.
6. Presumptive Stressful Life Event Scale.
7. Adjustment Inventory.
8. Self Concept.
9. Mental Health Inventory.
10. Rosenzweig's Picture Frustration Study.

11. Rorschach Inkblot Test.
12. Test of Anxiety.

Books Recommended :

Essential Readings :

1. Carson, R.C.; Butcher, J.N.; and Mineka, S. (2003) : *Abnormal Psychology and Modern Life,* New York : Pearson Education.
2. Davison, G.C. and Neale, J.M. (1998) : *Abnormal Psychology,* New York : John Wiley and Sons.
3. Garrett, H. E. (1966) : *Statistics in Psychology and Education,* New Delhi : Vakils, Feffer, and Simons.
4. Guilford, J.P., and Fruchter, B. (1981) : *Fundamental Statistics in Psychology and Education,* Singapore : McGraw Hill.

Reference Books :

1. Feldman, R.S. (1996) : *Understanding Psychology,* New Delhi : Tata McGraw Hill.
2. Sarason, I.G. and Sarason, B.R. (1996) : *Abnormal Psychology,* New Delhi : Prentice Hall of India.

GEOGRAPHY

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper–A : WORLD REGIONAL GEOGRAPHY- I

Max. Marks	:	75
Theory	:	65 marks
Internal Assessment	:	10 marks

Objectives :

To provide an understanding of the Concept of World Regions with respect to Land, People, Polity and Economy. The physical and human resource base and their interface with economic development. Development problems and prospects.

Course Content :

Study of the following regions of the world in terms of constituent countries, strategic location, salient physical, demographic and economic features, cultural patterns, resource base, economic development, problems, prospects and issues related to Regional Groupings (European Union, North Atlantic Treaty Organization, North American Free Trade Agreement and Commonwealth of Independent States).

UNIT-I

(i) Anglo-America (15 Lectures)

UNIT-II

(ii) Latin America (12 Lectures)

UNIT-III

(iii) Europe (15 Lectures)

UNIT-IV

(iv) Russia & Commonwealth of Independent States (18 Lectures)

(v) Australia

Note : 1. Question will be put on region(s) as a whole and not on individual country. The question should focus on regional perspective.

2. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 25-30 words each. Each part will carry 1½ marks (Total 15 marks).

3. The whole syllabus has been divided into 4 units. Eight questions will be set out of the whole syllabus i.e. 2 from each unit. The students will be required to attempt one question from each unit. Each question will carry 12 ½ marks. These will be in addition to the compulsory question at serial number 1.

4. Special credit will be given to suitable use of maps and diagrams.

5. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.

6. The reappear/ improvement candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

The paper setter must put note 6 in the question paper

Books Recommended :

Essential Readings :

1. Baerwald, T. J. and C. Fraser : *World Geography: A Global Perspective,* Prentice Hall, New Jersy, 1995.

2. Blij, Harm J. de Peter, O. Muller : *Geography : Regions and Concepts,* John Wiley, New York, 1993.

3. Cairns, G. O. et. al. : *Australia,* Macmillan Co., New York, 1962.

4. Coysh, A. W. and M. E. Tomlinson : *The Southern Continents,* University Tutorial Press, London, 1980.

5. English, Paul Ward & James, A. Miller : World Regional Geography: A Question of Place, John Wiley, New York, 1989.

6. Gilbert, Alan : *Latin American Development : A Geographical Perspective,* Hanswoodsworth Penguin, Middlesex, London, 1974.

7. Gottmann, Jean : *A Geography of Europe,* Harrape, & Co., London, 1969.

8. Gregory, J. S. ed. : *The Geography of USSR,* Novosti Press Agency, Moscow, 1985.

9. Hudson, F. S. : North America, Mc. Donald & Evans, Fly Mouth, 1975.

10. Jackson, Richard H. & Lloyd E. Hudman : *World Regional Geography: Issues for Today,* John Wiley, New York, 1991.

11.	Kromm, D. E.	:	*World Regional Geography,* Saunders Publishing, New York, 1980.
12.	Malmstorm, V. H.	:	*Geography of Europe: A Regional Analysis,* Englewood Cliffs Prentice Hall, New York, 1991.
13.	Patterson, J. H.	:	*North America,* Oxford University Press, New York, 1995.
14.	Salter, C. L., J.J. Hobbs et. al.	:	*Essentials of World Regional Geography,* Saunders College Publishing and Harcourt Brace College Publishers, Orlando, 1998.

Further Readings :

1.	Don R. Hoy (Ed.)	:	*Essentials of Geography and Development,* Macmillan, New York, 1980.
2.	Hussain, Majid	:	*World Regional Geography,* Rawat Publications, Jaipur, 2009.
3.	Mankoo, Darshan Singh	:	*A Regional Geography of the World,* Kalyani Publishers, Ludhiana, 2009.
4.	Tikkha, R. N., Bali, P.K. and Sekhon, M. S.	:	*World Regional Geography,* New Academic Publishers, 2007.
5.	Singh, Malkit	:	*World Regional Geography,* Rasmeet Prakashan, Jalandhar, 2009.

Pedagogy :

Teacher should involve maximum use of detailed maps of the countries and continents. Students should be encouraged to use atlas in classrooms. Video shows about culture, physiography and economy of these countries may be arranged if possible.

Paper-B : WORLD REGIONAL GEOGRAPHY- II

Max. Marks	:	75
Theory	:	65
Internal Assessment	:	10

Objectives:

To provide an understanding of the Concept of World Regions with respect to Land, People, Polity and Economy. The physical and human resource base and their interface with economic development. Development problems and prospects.

Course Content :
Study of the following regions of the world in terms of constituent countries, strategic location, salient physical, demographic and economic features, cultural patterns, resource base, economic development, problems, prospects and issues related to Regional Groupings (South Asian Association of Regional Cooperation, Association of South East Asian Nations, Organization of Petroleum Exporting Countries and Organization of African Unity).

UNIT-I

(i) East Asia (14 lectures)

UNIT-II

(ii) South East Asia (20 lectures)

(iii) South Asia.

UNIT-III

(iv) Middle East and North Africa (14 lectures)

UNIT-IV

(v) Africa South of Sahara (12 lectures)

Note :

1. Question will be put on region(s) as a whole and not on individual country. The question should focus on regional perspective.
2. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 25-30 words each. Each part will carry 1½ marks (Total 15 marks).
3. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. Each question will carry 12.5 marks. These will be in addition to the compulsory question at serial number 1.
4. Special credit will be given to suitable use of maps and diagrams.
5. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
6. The reappear/ improvement candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper setter must put note 6 in the question paper.

Books Recommended :

Essential Readings:

1. Baerwald, T. J. and C. Fraser : *World Geography : A Global Perspective*, Prentice Hall, New Jersy, 1995.

2. Blij, Harm J. de Peter, O. Muller : *Geography : Regions and Concepts,* John Wiley, New York, 1993.

3. Cressy, G. B. : *Asia's Land and People,* McGraw Hill, London, 1963.

4. Dobby, E. H. G. : *South East Asia,* University of London Press, London, 1980.

5. English, Paul Ward & James, A. Miller : *World Regional Geography : A Question of Place,* John Wiley, New York, 1989.

6. Fisher, W. B. : *The Middle East,* Methuen, London, 1978.

7. Ginsburg, Norton Ed. : *The Pattern of Asia,* Englewood Cliffs, New Jersey, 1958.

8. Hance, William, A. : *The Geography of Modern Africa,* Columbia University Press, London, 1965.

9. Jackson, Richard H. & Lloyd E. Hudman : *World Regional Geography : Issues for Today,* John Wiley, New York, 1991.

10. Kromm, D. E. : *World Regional Geography,* Saunders Publishing, New York, 1980.

11. Salter, C. L., J.J. Hobbs et. al. : *Essentials of World Regional Geography,* Saunders College Publishing and Harcourt Brace College Publishers, Orlando, 1998.

12. Spencer, J. E. and L. T. William : *Asia, East by South : A Cultural Geography,* John Willey & Sons, New York, 1971.

13. Spate, O. H. K. and A. T. A. Learmonth : *India and Pakistan: A General and Regional Geography,* Methuen, London, 1967.

14. Pritchard, J. M. : *Africa,* Longman, London, 1981.

Further Readings :

1.	Don R. Hoy (Ed.)	:	*Essentials of Geography and Development,* Macmillan, New York, 1980.
2.	Hussain, Majid	:	*World Regional Geography,* Rawat Publications, Jaipur, 2009.
3.	Mankoo, Darshan Singh	:	*A Regional Geography of the World,* Kalyani Publishers, Ludhiana, 2009.
4.	Tikkha, R. N., Bali, P.K. and Sekhon, M. S.	:	*World Regional Geography,* New Academic Publishers, 2007.
5.	Singh, Malkit	:	*World Regional Geography,* Rasmeet Prakashan, Jalandhar, 2009.

Pedagogy:

Teacher should involve maximum use of detailed maps of the countries and continents. Students should be encouraged to use atlas in classrooms. Video shows about culture, physiography and economy of these countries may be arranged if possible.

Paper-C: MAP PROJECTIONS AND FIELD REPORT

Max. Marks : 50
Time: 3 hours

Distribution of Marks :

(i)	Written paper of three hours covering all the Units to be held for students of University School of Open Learning For others it shall be at respective colleges.	:	20 marks
(ii)	Practical Record relating to Map Projections	:	10 marks
(iii)	Viva voce on Practical Record relating to Map Projections	:	5 marks
(iv)	Field Report	:	10 marks
(v)	Viva Voce on Field report	:	5 marks

Objectives:

- To provide an analytical understanding of use of common map projections.
- To acquaint the students with the importance of field work as one of the methodologies in geography.
- To sensitize the students about pre-field work and post-field work i.e. data processing and analysis and writing of field work report.

Course Content :

Unit-I

Map Projections :

General introduction, classification of projections, general principles of identification and choice of projections.

(5 lectures)

Unit-II

Construction, properties and limitations of following projections :

Cylindrical : Simple, Equal area, Mercators

Conical : One Standard Parallel, Two Standard Parallel , Bonne's and Polyconic and International

(10 lectures, 10 lab. session)

Unit-III

Zenithals : Gnomonic, Stereographic, Orthographic, Equidistant and Equal Area Polar cases only.

Conventional : Sinusoidal and Molleweide's (normal case only).

Introduction to Elementary Remote Sensing

(10 lectures, 15 lab. session)

Unit-IV

Fieldwork (Theory) : (i) Role of fieldwork in geography.

(ii) Scale of study and fieldwork methodology.

(iii) Methods of collecting primary data, questionnaire, observation and measurement.

(iv) Methods of field study of : a farm, a village, and a town.

(6 lectures)

Fieldwork (Practical) : A field report of minimum 10 pages will be prepared based on primary data on problems such as (a) local market survey, (b) service area of school/ or hospital; (c) traffic flow, and (d) socio-economic characteristics of student's village/ mohalla/ sector.

(15 lab. sessions)

Note :

1. The written and practical examination including viva-voce shall be conducted at the respective college itself except correspondence courses (USOL). However, the format of the question paper shall be uniform. A separate paper for 20 marks shall be prepared for colleges by the University from the prescribed syllabus.

2. Practical exam. at the respective colleges shall be conducted by one internal and one external examiner. The external shall be appointed by the Principal of the respective colleges in consultation with the senior most teacher of the geography in the college.

3. For students of correspondence courses under USOL, a written theory paper for 20 marks shall be conducted by the University along with the University examination.

4. A compulsory question containing 12 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 8 parts. The answer of each part should not exceed 25 words. Each part will carry 1/2 mark (Total 4 marks).

5. The whole syllabus has been divided into 4 units. Eight questions will be set out of the whole syllabus i.e. 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1.

6. Evaluation of Practical Record will be done at the time of viva-voce examination. A minimum of 20 sheets are to be prepared by the students. There will be no laboratory exercise at that time.

7. There will be no viva-voce examination for the candidates appearing through the Correspondence Courses. They will be required to submit their Practical Note Book (Practical files) with the University School of Open Learning (Department of Geography) at least 10 days before the commencement of their examination. Their Note Books (Practical files) will be evaluated by two examiners (including at least one from the USOL).

8. For the students of Correspondence Studies there will be an internal assessment of 10 marks in lieu of the viva-voce examination in practical record and field report. The marks obtained by the candidate will be added to the marks awarded by the internal and external examiners evaluating the Practical Record and Field Report.

9. A fresh practical note book/field report shall be prepared by failed /improvement candidates.

10. For Practical classes, the number of students in one group shall not exceed fifteen.

11. There will be 3 hours of teaching per week for this paper.

12. For reappear/improvement candidate(s) who have not been assessed earlier for Internal Assessment, the question paper(s) in their case shall be of Maximum Marks allotted to the paper(s) concerned.

The paper setter must put note 12 in the question paper.

Books Recommended :

Essential Readings

1. Jones, P.A. : *Fieldwork in Geography*, Longman, London, 1968.

2. Kellaway, George P. : *Map Projections*, Methuen and Co., London.

3. Singh, Gopal : *Mapwork and Practical Geography*, Surjeet Book Depot, Delhi, 1993.

4. Steers, J.A. : *Map Projections*, University of London Press, London.

Essential Readings

1. Archer, J.E. & Dalton, T.H. : *Fieldwork in Geography,* E.T. Bastford Ltd., London, 1968.

2. Hudson, F.S. : *A Geography of Settlements*, MacDonald, London, 1970.

3. Singh, L.R. & Singh, Raghunandan : *Mapwork and Practical Geography*, Central Book Depot, Allahabad, 1993, Reprint.

Pedagogy :

Basic fundamentals of map projections are introduced by demonstration of construction exercises in class. The students need to be trained to collect primary data, its processing and cartographic representation through taking up field exercises.

GANDHIAN STUDIES

B.A. (GENERAL) THIRD YEAR, EXAMINATION, 2011

PAPER-A : ECONOMIC THOUGHT OF MAHATMA GANDHI

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Course Objectives :

The paper is designed to acquaint the students with the Economic Thought of Mahatma Gandhi.

Pedagogy of the Course Work :

90% Lectures (including expert lectures)

10% Unit Tests, Snap Tests, assignments, attendance and class room participation

Note :

1. The syllabus will be divided into four (4) units.
2. There shall be 9 questions in all in each paper
3. The first question is **compulsory** and shall be short answer type containing 15 short answer type questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each.
4. Rest of the paper shall contain four (4) units and each unit shall have two essay type questions and the candidates shall be given internal choice of attempting one question from each unit- 4 in all. Each question will carry 18 marks.

UNIT-I

1. Influences on Gandhi's Economic Thought.
2. Fundamental Principles of Gandhi's Economic Thought

UNIT-II

3. Critique of Machinery
4. Labour Capital Relations
5. Theory of Trusteeship

UNIT-III

6. Concept of Sarvodaya & Bread Labour
7. Concept of Wantlessness
8. Doctrine of Swadeshi

UNIT-IV

9. Gandhi on Communism
10. Gandhi on Socialism
11. Gandhi on Capitalism
12. Contemporary Relevance

Essential Readings :

1. Diwan, Romesh and Lutz, Mark : *Essays in Gandhian Economics,* New Delhi: Gandhi Peace Foundation, 1985.
2. Gupta, S.S. : *Economic Thought of Mahatma Gandhi,* New Delhi, Concept, 1994.
3. Kumarappa, J.C. : *Gandhian Economic Thought,* Varanasi, Sarva Seva Sangh, 1962.
4. Maharajan, M. : *Economic Philosophy of Mahatma Gandhi,* New Delhi: APH, 1996.
5. Mashruwala, K.G. : *Towards Sarvodaya Order,* Ahmedabad: Navajivan Publishing House, 1971.

Further Readings :

1. Gandhi, M.K. : *Hind Swaraj,* Ahmedabad: Navajivan Pulishing House, 1985.
2. Schumacher, E.F. : *Small is Beautiful,* London, Abacus, 1989.

PAPER-B : GANDHI AND HIS CONTEMPORARIES

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Course Objectives :

The paper is designed to acquaint the students with the interaction Gandhi had with his contemporaries.

Pedagogy of the Course Work :

90% Lectures (including expert lectures)

10% Unit Tests, Snap Tests, assignments, attendance and class room Participation

Note :

1. The syllabus will be divided into four (4) units.
2. There shall be 9 questions in all in each paper.
3. The first question is **compulsory** and shall be short answer type containing 15 short answer type questions spread over the whole syllabus and each to be answered in about 25 to 30 words each. The candidate is required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each.
4. Rest of the paper shall contain four (4) units and each unit shall have two essay type questions and the candidates shall be given internal choice of attempting one question from each unit – 4 in all. Each question will carry 18 marks.

UNIT-I

1. Gandhi & G .K. Gokhale
2. Gandhi & Vinoba Bhave

UNIT-II

3. Gandhi & Subhash Chander Bose
4. Gandhi & Bhagat Singh

UNIT-III

5. Gandhi & Ambedkar
6. Gandhi & Lala Lajpat Rai

UNIT-IV

7. Gandhi & M.A. Jinnah
8. Gandhi & Jawahar Lal Nehru

Essential Readings :

1. Bharill, Chandra : *Social & Political Ideas of B.R. Ambedkar : A Study of His Life, Services, Social and Political Ideas,* Jaipur, Aalekh, 1977.
2. Bhave, Vinoba : Democratic Values, Kashi: Sarva Seva Sangh Prakashan, 1966.
3. Merriam, Allen Hayes : *Gandhi Vs Jinnah : The Debate over the Partition of India,* Calcutta: Minerva, 1980.
4. Nagar, Purshottam : *Lala Lajpat Rai : The Man and His Ideas,* New Delhi : Manohar Book Service, 1977.
5. Nanda, B.R. : *Three Statesmen: Gokhale, Gandhi & Nehru,* New Delhi, Oxford, 2004.
6. Ram, Suresh : *Vinoba and His Mission,* Kashi: Akhil Bharat Sarva Seva Sangh, March, 1958.
7. Suda, J.P. : *Main Currents of Social & Political Thought in Modern India,* Vols. I, II, III, Meerut: K. Nath & Co., 1973.
8. Varma, V.P. : *Modern Indian Political Thought,* Agra: Lakshmi Narain Aggarwal, 1994.

Further Readings :

1. Goyal, O.P. : *Moderate and Extremists,* Allahabad: Kitab Mahal, 1977.
2. Kulkarni, V.B. : *The Indian TriumVirate: A Political Biography of Mahatma Gandhi,* Sardar Patel and Pandit Nehru, Bombay: Bhartiya Vidya Bhawan, 1969.

JOURNALISM & MASS COMMUNICATION

B.A. (GENERAL) THIRD YEAR EXAMINATION, 2011

Objectives :

(I) The course will introduce the students to the basic structure of media organizations and the regulatory framework of the journalistic profession. It will also make them conversant with strategic communication by imparting training in writing advertising copy and press releases amongst other tools.

(II) Pedagogy of the Course Work:

80% Lectures (including expert lectures)

20% assignments, discussion and seminars.

INSTRUCTIONS FOR THE PAPER-SETTER AND THE CANDIDATES:

There shall be **9** questions in all. The first question shall be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 7 short answer type questions i.e. of 2 marks each. It shall carry 14 marks and shall be a **Compulsory** question. Rest of the paper shall contain **4** units. Each unit shall have **two** questions and the candidates shall be given internal choice i.e. the candidates shall attempt one question from each Unit – 4 in all. Each question will carry 14 marks.

Paper-A : MEDIA MANAGEMENT, ETHICS AND LAWS

Max. Marks	:	80 marks
Theory	:	70 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Unit I : Types of ownership patterns; structure of newspapers, radio and television organizations.

Unit II : Basic principles of Management; economics of print and electronic media.

Unit III : The Indian Constitution and Freedom of Speech and Expression; Self regulation and code of ethics; common ethical violations; role, responsibility and accountability of a journalist.

Unit IV : Overview of Media Laws: Right to Information Act, Copyright Act, Contempt of Court, Contempt of Legislature, Law of Defamation, Law of Obscenity.

Paper-B : ADVERTISING & PUBLIC RELATIONS

Max. Marks	:	80 marks
Theory	:	70 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Unit I : Definition, scope and concept of Public Relations, Public Relations in marketing mix.

Unit II : Brief introduction to PR tools and media relations.

Unit III : Definition, scope and concept of advertising; Advertising in marketing mix; advertising agency, structure and functions.

Unit IV : Basic principles of writing and copy; concept of USP, AIDA formula

PRACTICALS

Max. Marks : 40 marks

1	To prepare a file of stories illustrating ethical code violations	5 marks
2	Project on the management structure of any one media organisation	5 marks
3	Compilation of five press releases pertaining to campus events	10 marks
4	Portfolio of five self-designed advertisements	10 marks
5	Performance report of internship in an advertising or PR agency	10 marks

Essential Readings :

1. Harrison, Toni : *A Handbook of Advertising Techniques,* Kogan Page1, 1989.
2. Jefkins Frank : *Copywriting and its Presentation,* International Textbook Co., London, 1977.
3. Kumar Niraj : *Communication and Management,* Gyan Publishing House, 1997.
4. Venkateswaran, K.S. : *Mass Media Laws and Regulations,* in India Asian Mass Communication Singapore, 1993
5. Padhy, K.S. : *Battle for Freedom of Press in India,* Academic Foundation, N.D., 1991.

6. Basu, Durga Das : *Law of the Press,* Prentice Hall, India, N.D., 1996.

7. Williams, Herbert Lee : *Newspaper Organization and Management,* Surjeet Publications, 1978.

8. Lafrance Pierre : *Fundamental Concepts in Communication,* Prentice Hall, New Delhi, 1992.

9. Ravindran, R.K. : *Handbook of Mass Communication,* Anmol Publications, N.D., 1999.

10. Ravindran, R.K. : *Handbook of Press Laws and Ethics,* Anmol Publications, N.D., 1999.

11. Trikha, N.K : *The Press Council – A Self Regulatory Mechanism for the Press,* Somaiya Publications, N.D., 1986.

12. Clampitt, Phillip. G. : *Communicating for Managerial Effectiveness,* Sage Publications, N.D., 1991.

13. Thayer, Frank : *Newspaper Business Management,* Prentice Hall, N.Y., 1990.

14. Sindhwani, Trilok, N. : *Newspaper Economics and Management,* Ankur Publishing House, N.D., 1979.

15. Olen, Jeffrey : *Ethics in Journalism,* Prentice Hall, New Jersey, 1988.

16. Christians, Clifford and Traber, Michael : *Communication Ethics and Universal Values,* Sage Publications, N.D., 1997.

17. Sharma, B.R. : *Freedom of Press – Under the Indian Constitution,* Deep and Deep Publications, N.D., 1993.

18. Darbe, Arnold & Watson, S. : *Advertising: Its role in Modern Marketing,* Mc Graw Hill, New York, 1964.

19. Scott, Cutlip & Genter, A.H. : *Effective Public Relations,* Prentice Hall, 1964.

20. Mehta, D.S. : *Handbook of Public Relations in India,* Allied Publishers, 1972.

21. Black, Sam : *Role of Public Relations in Management,* Pitman, London, 1972.

22. Chiranjeev, Avinash : *Electronic Media Management,* Authors Press, New Delhi, 2000.

23. Panigrahy, Dibakar : Media Management in India, Kanishka Publishing House, New Delhi, 1993.

24. Jackquette, D. : *Journalistic Ethics: Moral Responsibility in the Media,* Pearson Education, 2007.

25. Batra, R. : *Advertising Management,* Pearson Education, 1996.

26. Wells, William : *Advertising Principles and Practice,* Pearson Education, 2007.

27. Jefkins, F. : *Advertising,* Pearson Education, 2000.

28. Cutlip, S. : *Effective Public Relations,* Pearson Education, 2000.

Reference Books :

1. Bhatia, Sita : *Freedom of Press – Politico-Legal Aspects of Press Legislations in India,* Rawat Publications, Jaipur, 1997.

2. D'Souza, Y.K. : *Freedom of Press: Constitution and Media Responsibility,* Commanwealth Publishers, N.D., 1998.

3. Chauhan, Swati and Chandra, Navin : *Journalism Today: Principles, Practices and Challenges,* Kanishka Publishers, N.D., 1997.

4. Sharma, S.R. : *Democracy and the Press,* Radha Publications, N.D., 1996.

5. Joseph, M.K. : *Freedom of the Press,* Anmol Publications, N.D., 1997.

6. Padhy, K.S. : *Indian Press: Role and Responsibility,* Ashish Publishing House, N.D., 1984.

7. Padhy, K.S. : *The Muzzled Press,* Kanishka Publishers, N.D., 1984.

8. Aggarwal, S.K. : *Media and Ethics,* Sipra Publications, N.D., 1993.

9. Grover, A.N. : *Press and the Law,* Vikas Publishing House, N.D., 1990.

10. Haywood, Roger : *All About PR,* Mc Graw Hill, 1987.

11. Pavlik, John : *Public Relations Handbook,* Sage, London, 1987.

12. Ogilvy, David : *Ogilvy on Advertising,* Pan Books, London, 1988.

13. Cohen, Dorothy : *Advertising,* Wiley, New York, 1972.

14. Padhye, Prabhakar : *Principles of Journalism,* Popular Prakashan, Mumbai, 1991.

15. Karkhanis, Sharad : *Indian Politics and Role of the Press,* Vikas Publishers, N.D., 1981

16. Mudgal, Rahul : *Contemporary Issues in Journalism,* Sarup and Sons, New Delhi, 1998.

17. Kamath, M.V. : *Journalists Handbook,* Vikas Publishing House, New Delhi, 1983.

18. Clampitt, Phillip. G. : *Communicating for Managerial Effectiveness,* Sage Publications, N.D., 1991.

POLICE ADMINISTRATION

B.A. (GENERAL) THIRD YEAR EXAMINATION 2011

Outline of Tests, Syllabi and Courses of Reading

Paper-A : ORGANISATION BEHAVIOUR With Special Reference to Police Administration

(A) Course Objectives:

The objective of this course is to familiarize the students with the concept, nature and significance of organizational behavior with special reference to police administration. The course also aims to discuss the foundations and models of organisational behavior. In particular, the students would be taught the concepts such as motivation, morale, leadership, communication, decision-making, and transactional analysis. Further, the inputs regarding the concept and rationale of organizational change and organizational development would be imparted to the students.

(B) Pedagogy of the Course Work:

90 per cent of the Course Content would be delivered through Lecture Method and rest 10 per cent would comprise of two internal examinations and attendance.

(C) Instructions for Paper Setters and Candidates:

- The maximum marks for the paper will be 100. The question paper will be of 90 marks and internal assessment of 10 marks.
- Time allowed will be 3 hours.
- There shall be 9 questions in all.
- The first question shall be compulsory and be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 2 marks (9×2 = 18 marks).
- Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall have two questions and the candidates shall attempt one question from each unit i.e. four questions in all. Each question will carry 18 marks (4×18 = 72 marks).

(D) Course Content :

Unit-I

Organisational Behaviour: Concept, Nature and Significance. Foundations of Organisational Behaviour – Scientific Management, Human Relations, Systems and Contingency. Models of Organisational Behaviour.

Unit-II

Motivation: Concept; and Theories – Maslow's Need Hierarchy and McGregor's Theory X & Y. Morale: Concept; and Factors to Build-up Morale in India Police. Leadership: Concept, Theories – Trait and Situational; and Qualities.

Unit-III

Communication: Concept, Process, Types and Barriers. Communication Modes in Indian Police. Decision-Making: Concept; Types; and Simon's Rational Comprehensive Theory. Transactional Analysis: Meaning; and Types of Transactions.

Unit-IV

Organisational Change: Concept; Rationale; and Resistance to Change. Organisational Development: Concept and Rationale.

Essential Readings :

1. Prasad, L.M. : *Organisation Behaviour,* Sultan Chand & Sons, New Delhi, 2008.

2. Aswathappa, K. : *Organisational Behaviour,* 7th Edition, Himalaya Publishing House, New Delhi, 2007.

3. Moorhead, Gregory & Ricky W. Griffin : *Organizational Behaviour: Managing People & Organizations,* Biztantra, New Delhi, 2005.

4. Robbins, Stephen P. : *Organizational Behaviour,* Prentice-Hall of India Private Limited, New Delhi, 2001.

5. Sharma, K.K. & Sahni, Pradeep : *Organisation Behaviour,* Deep & Deep Publishers, New Delhi, 1988.

6. Dubin, Robert : *Human Relations in Administration,* Prentice- Hall of India Private Limited, New Delhi, 1968.

7. George, C. S. : *History of Management Thought,* Prentice-Hall of India Private Limited, New Delhi.

8. Simon, Herbert A. : *Administrative Behaviour: A Study of Decision Making Process in Administrative Organisation,* Macmillan, New York, 1976.

9. Sapru, R. K. : *Theories of Administration,* S. Chand, New Delhi, 1996.

10. Maheshwari, S. R. : *Administrative Thinkers,* MacMillan, New Delhi, Latest Edition.

11. Saiyadain, Mirza S. : *Organisational Behaviour,* Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2006.

12. McShane, Steven L. Glinow, Mary Ann Von & Sharma, Radha R. : *Organisational Behaviour,* Tata McGraw-Hill, Publishing Company Ltd., New Delhi, 2006.

Further Readings :

1. Argyris, Chris : *Personality and Organisation: The Conflict Between System and the Individual,* Harper and Row, New York, 1957.

2. Argyris, Chris : *Integrating Individual and Organisation,* Wiley, New York, 1964.

3. Mayo, Elton : *The Social Problems of an Industrial Civilisation,* Routledge and Kegan Paul Limited, London, 1957.

4. Hicks, Herbert G. : *The Management of Organisation : A System and Human Resource Approach,* McGraw Hill, New York,1972.

5. Vadackumchery, James : *Police Leadership: The Inside Story,* APH Publishing Corporation, New Delhi, 1999.

6. Pugh, D. S. (ed.) : *Organisation Theory,* Penguin Books, Harmondsworth, 2nd Edition, 1984.

Paper-B : LAW AND POLICE ADMINISTRATION

(A) Course Objectives :

The police system in India has to work within the ambit of legal framework laid down by the Constitution and by the enacted laws. The major responsibility of the police is to ensure the implementation of such laws. The course has been designed to impart knowledge to the students on the laws governing the 'prevention and detection of crime' which is laid down as the primary duty in the Indian Police Act 1861. The endeavour of the course is to familiarize the students with the main provisions of the Indian Penal Code 1860, the offences under it and the offences affecting the human body. In addition, meaning and definition of terms covered under Section 2 relevant to the police administration along with the powers of the police officer have been discussed.

(B) Pedagogy of the Course Work :

90 per cent of the Course Content would be delivered through Lecture Method and rest 10 per cent would comprise of two internal examinations and attendance.

(C) Instructions for Paper Setters and Candidates :

- The maximum marks for the paper will be 100. The question paper will be of 90 marks and internal assessment of 10 marks.
- Time allowed will be 3 hours.
- There shall be 9 questions in all.
- The first question shall be compulsory and be short answer type containing 12 short questions spread over the whole syllabus and each to be answered in about 25 to 30 words. The candidate is required to attempt any 9 short answer type questions carrying 2 marks (9×2 = 18 marks).
- Rest of the paper shall contain 4 units. Each unit shall have two questions and the candidates shall be given internal choice i.e. the candidates shall have two questions and the candidates shall attempt one question from each unit i.e. four questions in all. Each question will carry 18 marks (4×18 = 72 marks).

(D) Course Content:

Unit-I

The Indian Penal Code 1860 : Main Provisions

(i) Jurisdiction (Sections 1-5)

(ii) General Explanations (Sections 6-52-A)

(iii) Punishments (Sections 53, 53A, 54, 55, 60, 63, 73)

Unit-II

Offences under the Indian Penal Code 1860

(i) Criminal Conspiracy (Sections 120-A, 120-B)

(ii) Offences against the State (Sections 121, 121-A, 124-A)

(iii) Offences Against Public Tranquility (Sections 141-147)

Unit-III

Offences Affecting Human Body

Definitions in General :

- Culpable Homicide (Section 299)
- Causing death by rash and negligent act (Section 304A)
- Dowry Death (Section 304B)
- Hurt (Section 319)
- Grievous Hurt (Section 320)
- Wrongful Restraint and Wrongful Confinement (Sections 339, 340)
- Assault (Section 351)
- Kidnapping and Abduction (Sections 359-362)
- Rape (Sections 375, 376)

Unit-IV

A. Meaning and definitions of the following terms (Section 2) :

- Bailable and non-bailable offence
- Charge
- Cognizable and non-cognizable offence
- Complaint
- Police Report
- Police Station
- Public Prosecutor
- Summons Case
- Warrant Case

B. Powers of Police Officer :

- Lodging of FIR (Section 154) (First Information Report)
- Arrest (Section 41)
- Search (Section 165)

Essential Readings :

1. Tandon, Mahesh Prasad & Tandon, Rajesh : *The Indian Penal Code,* Allahabad Law Agency, Latest Edition.
2. Gandhi, B. M. : *Indian Penal Code,* Eastern Book Company, 2nd Edition.
3. Bhattacharya, T. : *Indian Penal Code,* Central Law Agency, Allahabad, 2007.
4. Mishra, S.N. *Indian Penal Code,* Central Law Publications, Allahabad, 2007.
5. The Indian Penal Code *Bare Act with Short Notes,* Universal Law Publishing Co. Pvt. Ltd., Delhi, 2008.

Further Readings :

1. Lal, Rattan and Dhiraj Lal : *Indian Penal Code,* Lexis Nexis Butterworths, Wadhwa, Nagpur, 2008.

2. Vadackumchery, James : *Indian Police and Miscarriage of Justice,* A.P.H. Publishing Corporation, New Delhi, 1997.

3. Dutta, K.K. : *Some Aspects of Criminal Law,* A.P.H. Publishing Corporation, New Delhi, 1998.

COMPUTER SCIENCE

B.A./B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Scheme of Examination

				Exam. Hrs.	*Ext. + Int.*	*Max.Marks*
Paper A	: Theory	:	Business Data Processing and Database Management Software	3	67 + 8	75
Paper B	: Theory	:	Web Programming	3	67 + 8	75
Paper C	: Practical	:	Practical based on Paper A and Paper B	3	45 + 5	50

Note : Practical marks will include the appropriate weightage for proper maintenance of lab. record.

SYLLABUS AND COURSES OF READING

Paper-A : BUSINESS DATA PROCESSING AND DATA BASE MANAGEMENT

Objective :

The course enables the students to understand the basics of date processing, files, DBMS (concept & design) and Visual Foxpro.

Note : (i) The question paper will consist of Four sections.

(ii) Examiner will set total of ***nine*** questions comprising ***two*** questions from each Section and ***one*** compulsory question of short answer type covering whole syllabi.

(iii) The students are required to attempt ***one*** questions from each Section and the Compulsory question.

(iv) All questions carry equal marks unless specified.

SECTION-A

1. *Introduction to Data Processing :* Records and files : Data collection, preparation, verification, editing and checking.

2. *Business Files :* Master and transaction files, file generations, backups and file recovery procedures.

3. File sorting, searching, merging and matching.

SECTION-B

4. DBMS and its advantages; Data independence, data models; network model. DBTG proposal; data definition and manipulation languages, hierarchical and relational models, storage organisation for relations, relational algebra and calculus, relational query, languages query, processor and optimizer.

SECTION-C

5. *Design of a Database :* Normalization theory for design of relational databases. Functional dependencies, normal forms, multivalued dependencies, decomposition, integrity, protection, security, concurrency, recovery, distributed data bases, available data base system.

SECTION-D

6. *Visual FoxPro :* Getting started with FoxPro, data types, file handling commands, database control commands, indexing and sorting of a database file, searching and indexed file with FIND and SEEK. Summarizing database with count, sum, average, total. Creating and printing formatted reports.

References :

1. Data, C.J. : *An Introduction to Data Base Systems,* Vols. I and II, Addison-Wesley, 1981.
2. Ullman, Jeffrey D. : *Principles of Data Base Systems,* 2nd Edition, Galgotia Publ. Pvt. Ltd., 1982.
3. Whittington, R.P. : *Data Base System Engineering,* Clavendon Press.
4. Pratt, P. : *Data Base Systems Management and Design,* Boyd and Fraser Publ. Comp., 1987.
5. Kroenke, D.M. : *Data Base Processing : Fundamentals, Design, Implementation,* 2nd Edition, Galgotia Publ. Pvt. Ltd.
6. Gavin Powell : *Beginning Database Design.*
7. Jain, V.K. : *Database Management Systems.*
8. Andy Oppel : *Relational Databases – Principles and Fundamentals.*
9. Robert Vieira : *Beginning SQL Server 2005 Programming.*
10. Black Book : *Oracle 10g Database Administration Little Book.*

Paper B : WEB PROGRAMMING

Note : (i) The question paper will consist of four sections.

(ii) Examiner will set of ***nine*** questions comprising ***two*** questions from each Section and ***one*** compulsory question of short answer type covering whole syllabi.

(iii) The students are required to attempt ***one*** questions from each Section and the Compulsory question.

(iv) All questions carry equal marks unless specified.

Objective :
The course proudes fundamentals of Internet & web programming using HTML. It also couess frant page, Jawa screpт & Jawa .

SECTION-A

1. ***Internet :*** Evolution of Internet, Future of Internet, Services provided on the Internet, Internet Access Methods.
2. ***World Wide Web :*** Evolution of www, Future of www, Fundamentals of web.
3. ***Installing Netscape Communicator :*** Browising Internet using Netscape, Netscape Messenger.
4. ***Hypertext Markup Language :*** Introduction to HTML, Building Vlocks of HTML, HTML Lists, HTML Links, Images in HTML.

SECTION-B

5. ***Advanced HTML :*** HTML Tables, Frames, Layers, Forms, Editors.
6. ***Cascading Style Sheets :*** Introduction to CSS, Limitation of HTML, CSS Positioning.
7. ***Front Page :*** Installing Front Page, Front Page Editor, Create a Sample Website, Frames in Front Page, Front Page Components, Forms, Database pages.

SECTION-C

8. ***Dynamic HTML :*** Moving elements and images, changing colours and hiding elements, moving between layers, mouse rollovers.
9. ***Java Scripting :*** Features, tokens, data types, variables, operators, control structs, strings, arrays, functions, core language objects, client side objects, event handling, application related to client side from validation.

SECTION-D

10. ***Fundamentals of Java Programming Language :*** Java vs. C++, bytecode, java virtual machine, constants, variables, data types, operators, expressions, control structures, defining class, creating objects, accessing class members, constructors, method overloading.

References :

1. Kraynak & Hubraken : *Internet 6 in 1,* Prentice Hall of India, 2000.
2. Kasser : *Using the Internet,* PHI, 4th ed., 2000.
3. WALL : *Using the World Wide Web,* PHI, 2nd ed., 2000.
4. Phillips : *Using HTML,* PHI, 4th ed., 2000.
5. Randall & Jones : *Special Edition Using Front Page 2000,* PHI, 2000.
6. Liang : *An Introduction to Java Programming,* PHI, 2000.
7. : *DHTML* (Any Book)
8. : *Java Script* (Any Book).
9. John Duckelt : *Beginning Web Programming.*
10. Jim Keogh : *Java Programming Fundamentals.*
11. Paul Wilton : *Beginning Java Script II ed.* Wilby India Pvt. Ltd.

PAPER-C : PRACTICAL : Practical based on Paper A and Paper B.

HOME SCIENCE

B.A./B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011
Scheme of Examination

Theory						Practical				
Sr. No.	*Name of Paper*	*No. of Papers*	*Time in hrs.*	*Marks allotted*	*Int. Ass.*	*No. of Papers*	*Time in hrs.*	*Marks Allotted*	*Int. Ass.*	*Total Marks*
1.	Foods and Nutrition	1	3	65	10	1	3	40	10	125
2.	Child Development	1	3	65	10	--	--	--	--	75
									Total :	**200**

Note : Practical examination will be held before the Theory Examinations.

Paper A : FOODS AND NUTRITION (Theory)

Max. Marks : 75
Theory : 65
Int. Ass. : 10
Periods : 3 Hours/Week

INSTRUCTIONS FOR THE PAPER SETTER :

The question paper will consist of five Sections : A, B, C, D and E. Sections A, B, C and D will have **two** questions from the respective sections of the syllabus and will carry 13 marks each. Section E will consist of 13 objective type questions covering the entire syllabus uniformly and will carry 13 marks.

INSTRUCTIONS FOR THE CANDIDATES :

Candidates are required to attempt one question each from the Sections A, B, C and D of the question paper and the entire section E.

SECTION-A

1. *Importance and Functions of Food :*

   (a) Physiological; (b) Psychological; (c) Social

2. *Food Constituents :* Carbohydrates, Proteins and Fats—Functions, sources, requirements and deficiency.

3. *Methods of Cooking :* Boiling, steaming, frying, baking, roasting and microwave cooking.

SECTION-B

4. Functions, recommended allowances, deficiency excess and sources of the following food nutrients :

   (a) Vitamins–A, B, B_2, Niacin, C, D.; (b) Minerals–Calcium, Phosphorous, Iron, Sodium, Iodine.

5. *Food Preservation :* Definition, Importance & Principles.

Causes of food spoilage.

Household methods of food preservation—sun drying, use of salt, oil, spices, sugar & chemical preservatives.

SECTION-C

6. *Food Adulteration :*

(a) Definition; (b) Common Adulterants; (c) Food standards.

7. Concept of balanced diet.

8. Classification of food based on the five/seven food groups.

9. Principles of meal planning.

Planning of balanced diets for middle income group for the following :

(i) Pre-school children
(ii) School going
(iii) Adolescents
(iv) Adult—male and female (only moderate worker)
(v) Old age
(vi) Pregnancy
(vii) Lactation

SECTION-D

10. *Therapeutic Diets & Modification of Normal Diets :*

(a) Principles of therapeutic diets; (b) Concepts of soft, bland, liquid diets with examples.

11. Therapeutic diets in the following conditions with principles involved :

(a) Fever; (b) Constipation; (c) Diarrhea; (d) Hypercholestrdaemia and Hypertension; (e) Diabetes Mellitus.

Paper B : CHILD DEVELOPMENT

Max. Marks : 75
Theory : 65
Int. Ass. : 10

INSTRUCTIONS FOR THE PAPER SETTER :

The question paper will consist of five Sections : A, B, C, D and E. Sections A, B, C and D will have **two** questions from the respective sections of the syllabus and will carry 13 marks each. Section E will consist of 13 objective type questions covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES :

Candidates are required to attempt one question each from the Sections A, B, C and D of the question paper and the entire section E.

SECTION-A

1. Definition and importance of Child Development.
2. (a) Differences between growth and development; (b) Principles of development.
3. Physical development of the child from infancy to late childhood and factors effecting the same.

SECTION-B

4. Motor Development from infancy to late childhood.

   Pattern of motor development.

   Factors affecting motor development.

5. Emotional Development.

   Characteristics of children emotions.

   Common childhood emotions—Fear, anger, jealousy, love and affection, anxiety and curiosity.

6. Language Development.

   Stages of language development.

   Factors affecting language development.

SECTION-C

7. Play

   Significance of play.

   Types of play.

   Play materials/equipment required for various age groups.

8. Common behaviour problems and their remedies—Bed wetting, thumb sucking, nail biting, temper tantrums.

SECTION-D

9. Pregnancy

   Signs and symptoms of pregnancy.

Discomforts.

Complications.

Care during pregnancy.

Method of family planning in brief.

10. Pre-natal Development

Stages of pre-natal development.

Factors affecting pre-natal development.

11. Feeding of the infant

Importance and technique of breast feeding.

Bottle feeding.

Weaning.

Different kinds of important weaning foods for infants.

Importance of weaning.

PRACTICAL

Paper-A : FOODS AND NUTRITION

Max. Marks	:	40
Int. Ass.	:	10
Time	:	3 Hours
Teaching	:	3 Periods/Week

1. Preparation of minimum of three dishes by using various methods of cooking (e.g. boiling, steaming, baking), frying (deep & shallow); and roasting with different food groups (e.g. cereal, pulses & vegetable groups and their combinations).

2. Planning & Preparation of diets for the following :

   (a) Pre-School child; (b) School going/packed lunch; (c) Adolescence; (d) Adult (Man & Woman) moderate worker pregnancy and lactation diets.

3. Cooking and serving of the following :

   Invalid cookery : Soft, liquid, fluid diets.

4. Hot and cold beverages (atleast two each).

5. Calculation of energy and protein content of diet for various age groups and diseases.

6. Low calories recipe (five).

7. Low cost recipe (five).

8. Enhancing Nutritive Value (five).

Note : Practical exams. will be held before the theory exams.

List of Equipments for a practical group of 15 students :

1.	Gas Burners	15
2.	Cooking Range	01
3.	Ovens	05
4.	Mixers and Grinders	05
5.	Weighing Scales (for food)	05
6.	Gas Lighters	15
7.	Dustbin-Small	15-Big-1
8.	Vegetable Racks	02
9.	Plate Racks	15
10.	Storage Jars and Containers	25
11.	Refrigerator	01
12.	Icing Sets	05

Cooking Utensils

1.	Pressure Cooker	15
2.	Patila with Lid	30
3.	Kadahai	15
4.	Parat	15
5.	Tawa	15
6.	Chakla-Belna	15
7.	Grinding Stone	15
8.	Saucepans	15
9.	Karchhi	15
10.	Palta	15

11.	Poni	15
12.	Soup Strainers	15
13.	Sieves	15
14.	Enamel Bowls	15
15.	Baking Trays and Tins	15
16.	Cookie Trays	15
17.	Serving Trays	15
18.	Cutting Knives	15
19.	Peelers	15
20.	Jelly Moulds	15

Crockery and Cutlery

1.	Full Plates	30
2.	Half Plates	30
3.	Quarter Plates	30
4.	Cups & Saucers	30
5.	Soup Bowls	30
6.	Glasses	36
7.	Katoris Vegetables Bowls	30
8.	Dongas	30
9.	Forks	30
10.	Table Knives	30
11.	Table Spoons	48
12.	Tea Spoons	48
13.	Serving Spoons	24
14.	Tea Sets	05
15.	Dinner Sets	05
16.	Borosil Bowls	15
17.	Casseroies	15

Reference Books :

1. *Applied Nutrition,* R. Rajalakshmi, Oxford & IBH Publishing Co. Pvt. Ltd., N. Delhi.

2. *Principles of Nutrition-Dietetics,* Dr. M. Swaminathan,The Bangalore Printing and Publishing Co. Ltd. 88, Mysore Road, Bangalore.

3. *Food & Nutrition, Educational Planning Group,* Arya Publishing House, Karol Bagh, New Delhi-5.

4. *Normal and Therapeutic Nutrition,* Br Corinne, H. Robinson, Marlya R. Lowler, Macmillan Publishing Co., New York, Collier Macmillan Publishers, London.

5. *Nutritive Value of Indian Foods,* G. Copalen, B.V. Rama Sastri, and S.C. Balasubramaniam, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, India.

6. *Human Development,* Graing J. Graig, 5th Edition, 1989/Prentice Hall, Englewood Cliffs, New Jersey, 07632.

7. *The Modern Parents Guide to Baby & Child Care-Violet,* Broadribb, R. N.H.S. & Henry F. Loc. M.E., 1973 Macdonald's and Jane's London.

8. *Good House Keeping's Baby Book V—The Good Housekeeping,* 12th ed., 1959.

9. *These are your children—Dadys,* Gardner Jenkins and Helen Shacter, 4th ed., Scott, Foresman and Co., Glenview Illinios.

10. Hurlock, E.B., *Child Development,* 6th ed., McGraw Hill International Book Company, 1978.

MATHEMATICS

B.A./B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Note :

1. Syllabus of each paper has been split into two parts – Section A and Section B. Four questions will be set from each Section.
2. A student will attempt five questions in all selecting atleast two questions from each Section. Each question will carry 12 marks.
3. Teaching time shall be five periods (45 minutes each) per paper per week, including tutorials.

Paper- I : ANALYSIS

Max. Marks	:	67
Theory	:	60 marks
Internal Assessment	:	7 marks
Time	:	3 Hours

SECTION-A

Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of integral calculus. Mean value theorems of integral calculus.

Improper integrals and their convergence, Comparison tests, Abel's and Dirichlet's tests. Beta and Gamma functions. Frullani's integral. Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.

[Scope as in Chapters 6 (excluding Section 6.6.3), 9, 15 (Sections 15.1-15.14 only) of the book 'A Course of Mathematical Analysis' by Shanti Narayan, Twelfth edition.]

Double and triple integrals. Fubini's Theorem without proof, Change of order of integration in double integrals, volume of a region in space, Triple integrals in spherical and cylinderical coordinates, substitution in multiple integrals.

[Scope as in Sections 13.1 to 13.4, 13.6, 13.7 of Chapter 13 in the book 'Calculus and Analytical Geometry' by G. B. Thomas and R. L. Finney, 9th Edition.]

SECTION-B

Sequences and series of functions, pointwise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity, uniform convergence and Riemann integration, uniform convergence and

differentiation, Weierstrass approximation theorem, Power series, interval of convergence of power series, Abel's and Taylor's theorems for power series.

Fourier series. Fourier expansion of piecewise monotonic functions.

[Scope as in relevant sections of Chapters 12, 13, 14 of the book 'Mathematical Analysis'(2nd edition) by S. C. Malik and Savita Arora.]

References :

1.	T. M. Apostol	:	*Mathematical Analysis,* Narosa Publishing House, New Delhi, 1985.
2.	R. R. Goldberg	:	*Real Analysis,* Oxford & IBH Publishing Co., New Delhi, 1970.
3.	S. Lang	:	*Undergraduate Analysis,* Springer-Verlag, New York, 1983.
4.	D. Somasundaram and B.Choudhary	:	*A First Course in Mathematical Analysis,* Narosa Publishing House, New Delhi, 1997.
5.	Shanti Narayan	:	*A Course of Mathematical Analysis,* S. Chand & Co., New Delhi.
6.	P.K.Jain and, S.K.Kaushik	:	*An Introduction to Real Analysis,* S. Chand & Co., New Delhi, 2000.
7.	S.C.Malik and Savita Arora	:	*Mathematical Analysis,* 2nd edition, New Age International Publishers.
8.	G.B.Thomas and R. L. Finney	:	*Calculus and Analytic Geometry* (Ninth edition), Pearson Publication.

Paper-II : ABSTRACT ALGEBRA

Max. Marks	:	67
Theory	:	60 marks
Internal Assessment	:	7 marks
Time	:	3 Hours

SECTION A

Groups, Subgroups, Cosets, Lagrange's Theorem, Normal Subgroups and Quotient groups. Homomorphisms, Isomorphism Theorems, Conjugate Elements, Class Equation, Permutation Groups, Alternating Groups, Simplicity of $A_n, n \geq 5$ (without proof), Automorphisms of Groups. [Scope as in Chapters 2 & 3 of the book 'Modern Algebra' (8th Edition) by S. Singh and Q. Zameeruddin.]

Rings, Subrings and Ideals, Quotient Rings, Fields and Homomorphisms, Integral Domains, Field of Quotients and Embedding Theorems, Polynomial Rings.

[Scope as in Chapters 7, 8, 9 of the book 'Modern Algebra' (8^{th} Edition) by S. Singh and Q. Zameeruddin.]

SECTION B

Vector Spaces, Subspaces, Linear Dependence, Quotient Spaces, Direct Sums and Complements, Matrices and Change of Bases.

[Scope as in Chapter 11, Section 1-6 of the book 'Modern Algebra' (8^{th} Edition) by S. Singh and Q. Zameeruddin.]

Linear Transformation, Algebra of Linear Transformation, Dual Spaces, Matrices and Linear Transformation.
[Scope as in Chapter 12 of the book 'Modern Algebra' (8^{th} Edition) by S. Singh and Q. Zameeruddin.]

Characteristic roots and characteristic vectors of a matrix, nature of characteristic roots of special types of matrices, relation between algebraic and geometric multiplicities of a characteristic root. Minimal polynomial of a matrix. Orthogonal reduction of real symmetric matrices, Unitary reduction of Hermitian matrices, similarity of matrices, diagonalisation of matrices.
[Scope as in sections 11.1-11.4, 11.7, 12.2, 12.3, 12.4, 12.6, 13.1-13.4 from the book 'A Text Book of Matrices' by Shanti Narayan and P.K.Mittal (10^{th} edition)].

References :

1. S. Singh and Q. Zameeruddin : *Modern Algebra*, 8^{th} Edition, Vikas Publishing House, New Delhi.
2. I.N. Herstein : *Topics in Algebra*, 2^{nd} Edition, Wiley Eastern Ltd., New Delhi.
3. M. Artin : *Algebra*, Prentice Hall of India, New Delhi, 1994.
4. J. A. Gallian : *Contemporary Abstract Algebra*, Narosa Publishing House, New Delhi.
5. K.B. Datta : *Matrix and Linear Algebra*, Prentice Hall of India Pvt. Ltd., New Delhi, 2000.
6. K. Hoffman and R. Kunze : *Linear Algebra*, 2^{nd} Edition, Prentice Hall, New Jersey, 1971.
7. V. Krishnamurthy, V. P. Mainra and J. L. Arora : *An Introduction to Linear Algebra*, East West Press.
8. Shanti Narayan and P.K.Mittal : *A Text Book of Matrices*, 10^{th} edition (2002), S. Chand & Co.

Paper-III : OPTIONAL

Choose any one from the following two optional papers.

Option (i) : Discrete Mathematics

Max. Marks	:	66
Theory	:	60 marks
Internal Assessment	:	6 marks
Time	:	3 Hours

SECTION A

The pigeonhole principle : Simple form, strong form and its applications. A Theorem of Ramsey (without proof). Permutations and combinations of sets and multisets.

Identities involving binomial co-efficients. Pascal's formula. The multinomial theorem. Newton's binomial theorem. The inclusion exclusion principle and its applications. Derangements. Permutations with forbidden positions.

Recurrence relations – Linear Recurrence relations with constant co-efficients. Homogeneous solutions, particular solutions, total solutions. Non homogeneous recurrence relation.

Generating functions, Exponential generating functions, solution of recurrence relations using generating functions, Catalan numbers, Difference sequences and stirling numbers, Partition numbers.

[Scope as in Chapters 2, 3, 5-8 of Introductory Combinatorics, 3rd Edition by R. A. Brualdi.]

SECTION B

Combinatorial designs, block designs, Steiner triple system, Latin squares.

Graphs : Basic properties, Eulerian trails, Hamilton Chains and Cycles, Bipartite multigraphs. Plane and Planar Graphs.

Trees, Spanning trees: Breadth first, Depth first, Dijkstra's, Kruskal and Prim's algorithms to generate spanning trees.

Directed graphs and networks. Chromatic number.

[Scope as in Chapters 10-13 (Sections 13.1, 13.2 only) of Introductory Combinatorics, 3rd Edition by R. A. Brualdi.]

References :

1. R. A. Brualdi : *Introductory Combinatorics, 3rd Edition.*
2. Mott, Kendal & Baker : *Discrete Mathematics for Computer Scientists and Mathematicians.*
3. Schaum Series : *Discrete Mathematics.*
4. C. L. Liu : *Elements of Discrete Mathematics,* Tata McGraw Hill, International Edition, Computer Science Series, 2000.
5. C. L. Liu : *Introduction to Combinatorial Mathematics,* McGraw Hill Book Company, New York.

Option (ii) : Probability Theory and Numerical Analysis

Max. Marks	:	66
Theory	:	60 marks
Internal Assessment	:	6 marks
Time	:	3 Hours

SECTION-A

Probability Theory :

Notion of probability: Random experiment, sample space, axiom of probability, elementary properties of probability, equally likely outcome problems, Conditional Probability, Bayes' Theorem.

Random Variables: Concept, cumulative distribution function, discrete and continuous random variables, expectations, mean, variance, moment generating function.

Discrete random variable: Bernoulli random variable, binomial random variable, geometric random variable, Poisson random variable.

Continuous random variables: Uniform random variable, exponential random variable, Gamma random variable, normal random variable.

Bivariate random variables: Joint distribution, joint and conditional distributions, Conditional Expectations, Independence, the correlation coefficient.

SECTION-B

Numerical Analysis :

Solution of Equation: Bisection, Secant, Regula Falsi, Newton's Method, Roots of Polynomials.

Interpolation: Lagrange and Hermite Interpolation, Divided Differences, Difference Schemes, Interpolation Formulas using Difference.

Numerical Differentiation.

Numerical Quadrature: Newton-Cote's Formulas, Gauss Quadrature Formulas, Chebychev's Formulas.
Linear Equations: Direct Methods for Solving Systems of Linear Equations (Gauss Elimination, LU Decomposition, Cholesky Decomposition), Iterative Methods (Jacobi, Gauss-Seidel, Relaxation Methods).
The Algebraic Eigenvalue problem: Jacobi's Method, Givens' Method, Householder's Method, Power Method, QR Method, Lanczos' Method.

Ordinary Differential Equations: Euler Method, Single-step Methods, Runge-Kutta's Method, Multi-step Methods.

References :

1. S. M. Ross : *Introduction to Probability Models* (Sixth edition), Academic Press, 1997.
2. I. Blake : *An Introduction to Applied Probability,* John Wiley & Sons, 1979.
3. J. Pitman : *Probability,* Narosa, 1993.
4. A.M. Yagolam and I.M.Yagolam : *Probability and Information,* Hindustan Publishing and Corporation, Delhi,1983.
5. P. L. Meye : *Introductory Probability and Statistical Applications,* 2nd Edition, Oxford and IBH Publishing Co.
6. C.E. Froberg : *Introduction to Numerical Analysis* (Second Edition), Addison-Wesley, 1979.
7. Melvin J. Maron : *Numerical Analysis : A Practical Approach,* Macmillan Publishing Co., Inc. New York, 1982.

8. M.K. Jain, S.R.K. Iyengar and R.K. Jain : *Numerical Methods for Scientific and Engineering Computation,* New Age International (P.) Ltd., 1999.

9. R.Y. Rubistein : *Simulation and the Monte Carlo Methods,* John Wiley, 1981.

10. D. J. Yakowitz : *Computational Probability and Simulation,* Addison-Wesley, 1977.

11. S.S. Sastry : *Introductory Methods of Numerical Analysis,* 3rd Edition (2000), Prentice Hall of India Pvt. Ltd., New Delhi.

STATISTICS

B.A./B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Note :

1. A candidate shall offer this subject in B.A./B.Sc. only if he/she takes up Mathematics as a subject in B.A./B.Sc.
2. A candidate shall offer this subject in B.A./B.Sc. Third year only if he/she had taken up the corresponding subject in B.A./B.Sc First and Second years.
3. There are three papers code named papers 301, 302 and 303 in the subject of Statistics in B.A./B.Sc., Third year. These are to be taught simultaneously throughout the year.
4. 4 lectures (45 minutes each) per paper per week amounting in all to 12 lectures for three papers shall be allocated for the teaching.

Paper-301 : DEMOGRAPHY AND ECONOMIC STATISTICS

Max. Marks	:	75
Theory	:	65 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Note : There will be in all nine (9) questions and all the questions will carry equal marks. The first question is compulsory and will be of short answer type covering the entire syllabus. Out of the remaining eight (8) questions, four (4) questions will be set from each section. The candidate will be required to attempt five questions in all including the compulsory first question and two questions from each section.

SECTION-I

Sources of demographic data-census, vital statistical registers, adhoc surveys and hospital records. Measurement of mortality - crude death rate, specific death rates, standardized death rate, infant mortality rate and cause of death rate, complete life Table and its description. Measurement of fertility - crude birth rate, general fertility rate, total fertility rate, gross reproduction rate and net reproduction rate.

Economic time series, its different components, illustrations, additive and multiplicative models, determination of trend, growth curves (exponential & gompertz curves), analysis of seasonal fluctuations, construction of seasonal indices.

SECTION-II

Index numbers**,** definition, methods to construct price, quantity and value index numbers. Problems involved in the construction of index numbers, use of averages, simple aggregative and weighted average methods. Laspeyre's, Paasche's, Edgeworth - Marshall and Fisher's index numbers. Time and factor reversal tests of index numbers. Change Base index numbers, Cost of living index number, interpretation and applications of index numbers.

Static laws of demand and supply, price elasticity of demand, Pareto distribution, log normal distribution and their properties.

References :

1. Goon, A.M., Gupta, M.K., Das Gupta, B. (2005) : *Fundamentals of Statistics,* Vol. II, World Press, Calcutta.
2. Srivastava, O.S. (1983) : *A Textbook of Demography,* Vikas Publishing.

Additional References :

1. Croxton, F.E and Cowden, D.J. (1969) : *Applied General Statistics,* Prentice Hall of India.
2. Gupta and Mukhopadhyay, P.P. : *Applied Statistics,* Central Book Agency.

Paper -302 : STATISTICAL QUALITY CONTROL AND COMPUTATIONAL TECHNIQUES

Max. Marks	:	75
Theory	:	65 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Note : There will be in all nine (9) questions and all the questions will carry equal marks. The first question is compulsory and will be of short answer type covering the entire syllabus. Out of the remaining eight (8) questions, four (4) questions will be set from each section. The candidate will be required to attempt five questions in all including the compulsory first question and two questions from each section.

SECTION-I

Importance of Statistical methods in industrial research and practice, meaning of quality, quality assurance and process control. General theory of control charts, causes of variations in quality, control limits, sub-grouping summary of out of control criteria, Charts for variables - $\overline{X}$ and R charts. Charts for attributes - np, p, c and u - charts.

Principle of acceptance sampling- problem of lot acceptance, stipulation of good and bad lots, concepts of producer's and consumer's risks, AQL, LTPD, AOQL, ATI, ASN and OC functions. Single and double sampling plans and their ATI, ASN and OC functions.

SECTION-II

Difference tables and methods of interpolation, Newton's and Lagrange's methods of interpolation, divided differences, numerical differentiation and integration. Trapezoidal rule, Simpson's one third formula, iterative solution of linear equations by Gauss – Seidel Method.

Linear Programming : Elementary theory of convex sets, definition of general linear programming problems (LPP), formulation of LPP, examples of LPP. Graphical and simplex methods of solving an LPP, artificial variables, duality of LPP ,Transportation problem (non-degenerate and balanced cases).

References :

1. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2005) : *Fundamental of Statistics,* Vol. I., World Press, Calcutta.
2. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2005) : *Fundamental of Statistics,* Vol. II., World Press, Calcutta.
3. Kantiswarrop, Gupta, P.K. and Manmohan : *Operation Research.*

Additional References :

1. Grant, E.L . (1964) : *Statistical Quality Control,* McGraw Hill.
2. Duncan, A.J. (1974) : *Quality Control and Industrial Statistics,* Taraporewala and Sons.
3. Gass, S.I. (1975) : *Linear Programming Methods and Applications,* McGraw Hill.
4. Rajaraman, V. (1981) : *Computer Oriented Numerical Methods,* Prentice Hall.

Paper-303 : PRACTICAL

Marks : 50

Time : 3 Hours

(Viva voce: 10 marks; record of the year: 10 marks; Annual Paper: 30 marks)

Note : The Practical Question Paper will contain five questions from the following topics. A student will be required to attempt three questions, each of 10 marks, in three hours duration.

1. Computing measures of mortality & fertility, construction of complete life table and examples involving users of life tables.

2. Construction of Index Numbers by Laspeyre's, Paasche's, Edgeworth-Marshall's and Fisher's methods.

3. Determination of trend, construction of seasonal indices in a time series.

4. Drawing of $\overline{X}$ - R, np, p,c and u – charts, Drawing of OC, AOQ and ATI curves for single and double sampling plans for attributes.

5. Construction of difference tables, use of Newton, Lagrange and divided difference interpolation formulae, numerical evaluation of integrals using Trapezoidal and Simpson one-third formulae, solution of system of linear equations by Gauss – Seidel iterative method.

6. Formulation of LPP's and their duals. Solving LPP's by graphical and Simplex methods, solution of transportation problem.

APPLIED STATISTICS

B.A./B. Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper- A: ESTIMATION AND TESTING OF HYPOTHESIS

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Note : 1. There will be in all nine (9) questions. The first question is compulsory and will be of short answer type covering the whole syllabus. The compulsory question will have (9) parts of 2 marks each. Of the remaining eight (8) questions, four (4) questions will be set from each section. The candidates will be required to attempt five (5) questions in all including the compulsory first question and two questions from each section.

2. 4 to 5 lectures (40 minutes each) per paper per week amounting in all to 9 lectures for two papers shall be allocated for the teaching.

SECTION-I

Estimators and estimates, unbiased, consistent, efficient estimators. Methods of moments, maximum likelihood estimators for the parameters of Binomial, Poisson and normal distributions, confidence intervals.

Tests of a statistical hypothesis, two types of errors, power of a test, Tests for the parameters of Binomial, Poisson and normal distributions, Chi-squared tests of goodness of fit. Wilcoxon, and sign test.

SECTION-II

Analysis of variance, one and two way classifications. Estimates of main effects, tests of significance for equality of effects.

Principles of design of experiments - Randomization, replication and local control. Completely randomized and randomized block designs.

Multivariate Techniques (upto 4 variables only). Estimators of mean vector and variance - covariance matrix of multivariate (upto 4) normal distribution, multiple regression, multiple correlation and partial correlation.

Book Recommended :

Goon, A.M., Gupta, M.K. and Das Gupta, B. : *Fundamentals of Statistics (2005),* Vol. I Chapters: 14 to18 (Only the relevant portion from these chapters as suggested by the body of the syllabus) Fundamentals of Statistics (2005), Vol. II, Chapters: 1, 2 (only the relevant portion from these chapters as suggested by the body of the syllabus).

Paper-B : ECONOMICS AND INDUSTRIAL STATISTICS

Max. Marks	:	100
Theory	:	90 marks
Internal Assessment	:	10 marks
Time	:	3 Hours

Note : There will be in all nine (9) questions. The first question is compulsory and will be of short answer type covering the whole syllabus. This question will have (9) parts of 2 marks each. Of the remaining eight (8) questions, four (4) questions will be set from each section. The candidate will be required to attempt five (5) questions in all including the compulsory first question and two questions from each section.

SECTION-I

Sampling : Simple random and stratified sampling, optimum allocation in stratified sampling. Ratio and regression estimates.

Index Numbers : Index Numbers-as weighted averages, Price Index numbers, Quantity index numbers, Fisher's tests for index numbers.

Time Series : The four components of a time series, moving average, the Slutsky Yule effect, determination of trend by curve fitting and moving average methods.

SECTION-II

Quality Control : Construction, use and interpretation of control charts for mean, range, fraction defective and number of defects. Single sampling inspection plans. Concepts of producer's and consumer's risks, O.C. and A.O.Q. Curves.

Vital Statistics : Rates and ratios, crude death rate, age specific death rate, infant mortality rates, standardized death rates, direct and indirect methods. Measurement of fertility, crude birth rate, general, specific and total fertility rates. Standardized birth rates. Calendar Year rates.

Books Recommended :

Goon, A.M., Gupta, M.K. and Dasgupta, B. (2005) : *Fundamentals of Statistics,* Vol. II , Ch. 3, 4, 6, 7, 9. (Only the relevant portion from these chapters as suggested by the body of the syllabus).

PHYSICS

B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Note :

1. There will be three papers of theory and one laboratory (practical) course.
2. The number of lectures per week will be three for each theory paper and six for practicals.
3. The examination time for each theory paper will be three hours and four hours for practicals.
4. Each theory paper will consist of nine questions carrying equal marks and spread over five prescribed units.
5. Eights questions in each theory paper will be set from units I to IV with two questions from each unit.
6. Ninth question in each paper is compulsory and will comprise of seven small answer type questions covering the whole syllabus.
7. The numerical problems/exercises in the question paper should be 25-30%.
8. Student will attempt one question from unit (I-IV) and any six parts of question nine.
9. The use of Non-programmable calculators will be allowed (paper setters should explicitly mention this on the question paper) in the examination centre but these will not be provided by the University/Collage. Mobile phones and pagers are not allowed in the examination hall.

Papers, marks and teaching hours allocation :

Paper A :	Condensed Matter Physics	:	(45+5*) marks	Total Teaching hours** 60
Paper B :	Electronics and Solid State Devices	:	(45+5*) marks	Total Teaching hours** 60
Paper C :	Nuclear & Particle Physics	:	(45+5*) marks	Total Teaching hours** 60
	Physics Practicals	:	50 marks	Total Teaching hours 90

***** Marks allotted for internal assessment.

** within the prescribed teaching load, teachers must given two assignments per paper per academic term (July – September, October – December, January – March) with stress on problem solving to enhance the skill component of the students.

Paper A : CONDENSED MATTER PHYSICS (60 Hrs.)

UNIT-I

Crystal structure, Symmetry operations for a two dimensional crystal. Two dimensional Bravais lattices, Three dimensional Bravais lattices, Basic primitive cells, Crystal planes and Miller indices, Diamond and NaCl structure. Crystal diffraction : Bragg's Law, Experimental methods for crystal structure studies, Laue equations, Reciprocal lattices of SC, BCC and FCC, Bragg's law in reciprocal lattice, Brillouin zones and its derivation in two dimensions, structure factor and atomic form factor.
Determination of crystal structure.

UNIT-II

Lattice vibrations, concepts of phonons, Scattering of photons by phonons, vibrations of mono and diatomic, linear chains, Density of modes, Einstein and Debye models of specific heat, Free electron model of metals, Free electron, Fermi gas and Fermi energy.

UNIT-III

Band Theory : Kronig-Penney model, metals and insulators, conductivity and its variation with temperature in semi-conductors, Fermi levels in intrinsic and extrinsic semi-conductors, Qualitative discussion of band gap in semi-conductors. Dielectric constant & polarisability, frequency dependence, ferroelectrics and piezoelectrics.

UNIT-IV

Magnetic classification of solids (Dia, para, ferro, ferri, antiferro), Langevin theory, Quantum theory, Weiss theory, temperature dependence, hysteresis of ferromagnetic materials. Superconductivity, Meisner effect, penetration depth, critical field and temperature, BCS theory (formation of cooper pairs, ground state and energy gap.

UNIT-V

Spread over the entire syllabi of all the four units above.

Recommended Books :

Essential Readings :

1. Kittel, C. : *Introduction to Solid State Physics,* Wiley Eastern.
2. Patil, S.H. : *Elements of Modern Physics,* TMGH, 1985.

Further Readings :

1.	Pillai, S.O.	:	*Solid State Physics,* 6th Edition, New Age International Publishers.
2.	Srivastava, J.P.	:	*Elements of Solid State Physics,* 2nd Edition, Prentice Hall.
3.	M. Ali Omar	:	*Elementary Solid State Physics,* Pearson.
4.	Verma, A.R. Srivastava, O.N.	:	*Crystallography for Solid State Physics,* Wiley Eastern.

Paper-B : ELECTRONICS AND SOLID STATE DEVICES (60 Hrs.)

UNIT-I

Concepts of current and voltage sources, p-n junction, biasing of diode, V-A characteristics, zener diode, LED, LCD, rectification : half wave, full wave rectifiers and bridge rectifiers, filter circuits (RC, LC and π filters), efficiency, ripple factor, voltage regulation, voltage multiplier circuits.

UNIT-II

Junction Transistor : Structure and working, relation between different currents in transistor, sign conventions, amplifying action. Different configurations of a transistor and their comparison, CB and CE characteristics, structure of JEFT and MOSFET, Transistor biasing and stabilization of operating point, fixed bias, collector to base bias, bias circuit with emitter resistor, voltage divider biasing circuit.

UNIT-III

Working of CE amplifier, Amplifier analysis using h-parameters, equivalent circuits, determination of current gain, power gain, input impedance, FET amplifier and its voltage gain, operational amplifier, characteristics and applications, feed back in amplifiers, different types, voltage gain, advantages of negative feed back, emitter follower as negative feed back circuit.

UNIT-IV

Barkhausen criterion of sustained oscillations, LC oscillator (tuned collector, tuned grid, Hartley), RC oscillators, phase shift and wein bridge, Modulation and detection, AM and FM, Power in AM and generation of AM detector, Radio transmitter, Radio wave propagation, Ionosphere, radio receiver, TV receiver.

UNIT-V

Spread over the entire syllabi of all the four units above.

Recommended Books :

Essential Readings :

1. Bhargave, N.N., Kulshreshtha, D.C. and Gupta, S.C. : *Basic Electronics and Linear Circuits,* Tata Mc Graw Hill.
2. Chatopadhyay, D., Rakshit, P.C., Saha, B., and Purkit, N.N. : *Foundations of Electronics,* New Age International.

Further Readings :

1. Thareja, B.L. : *Basic Electronics,* 5th Edition, S. Chand.
2. Ben G. Streetman : *Solid State Electronic Devices,* 3rd Edition.
3. Malvino, A.P. : *Electronic Principles,* McGraw Hill

Paper-C : NUCLEAR AND PARTICLE PHYSICS (60 Hrs.)

UNIT-I

Constituents of nucleus and their intrinsic properties, Qualitative facts about size, mass, density, energy, charge, binding energy, angular momentum, magnetic moment and electric multipole moments of the nucleus, Wave mechanical properties of nucleus, Average Binding energy and its variation with mass number, properties of nuclear forces and saturation, Non-existence of electrons in the nucleus and neutron-proton model, Assumptions of liquid drop model, semi-empirical mass formula, conditions of nuclear stability, Fermi gas model, Nuclear Shell Model, Experimental evidence of magic numbers and its explanation.

UNIT-II

Radioactivity, Modes of decay, and successive radioactivity, Aplha emission, electron emission, positron emission, electron capture, gamma-ray emission, internal conversion, Qualitative discussion of alpha, beta and gamma-ray spectra, Geiger-Nuttal rule, Neutrino hypothesis of beta decay, Evidence of existence of Neutrino, Qualitative discussion of alpha and beta decay theories. Nuclear Reactions, Reaction cross section, conservation laws, Kinematics of nuclear reaction, Q-value and its physical significance, compound nucleus, possible reaction with high energy particles.

UNIT-III

Energy loss due to ionization (Bethe Block formula), Energy loss of electrons, Bremsstrahlung, Multiple Coulomb scattering, Gamma-ray through matter, pair production, radiation loss by fast electrons, radiation length, electron-positron annihilation, Cyclotron, Betatron, Qualitative discussion of Synchrotron, Collider machines and Linear accelerators.

UNIT-IV

Ionization chamber, proportional counter, G.M. counter, Scintillation counter, Solid State detectors. Subatomic particles and their masses, lifetimes, decay modes, classification of these particles, types of interactions, Conservation laws and quantum numbers, concepts of isospin, strangeness, charge conjugation, antiparticles, introduction to quarks and qualitative discussion of the quark model.

UNIT-V

Spread over the entire syllabi of all the four units above.

Recommended Books :

Essential Readings :

1. Kaplan, I. : *Nuclear Physics,* Addition-Wesley, Publishing Company Inc..
2. Bhiday, M.R. and Joshi, V.A. : *An Introduction to Nuclear Physics,* Orient Longman.
3. Beiser : *Concept of Modern Physics,* McGraw Hill.

Further Readings :

1. Cohen, B.L. : *Concepts of Nuclear Physics,* TMH Edition.
2. Segre, E. : *Nuclei & Particles.*
3. Verma, J. : *Fundamentals of Nuclear Physics,* CBS.

PHYSICS PRACTICALS (90 Hours) Total Marks : 50

General Guidelines for Physics Practical Examinations :

1. *The distribution of marks is as follows :*

   (i) One full experiment out of Section–A requiring the student to take some data, analyse it and draw conclusions (candidates are expected to state their results with limits of error. : 20 marks

   (ii) Brief resume (theory). : 05 marks

   (iii) One exercise based on experiment or Computer Programming. : 10 marks

   (To be allotted by the external examiner at the time of examination).

(iv) Viva-Voce. : 10 marks

(v) Record (Practical file). : 05 marks

Note for Examiners :

The marks scored under each head must be clearly written on the answer sheet.

2. There will be one session of 4 hours duration. The paper will have two sections. Section–A will have 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

3. Section–B will consist of exercises which will be set by the external examiner at the spot. The length of the exercises should be such that any of these could be completed in one hour.

4. The examiner should take care that the experiment allotted to an examinee from section–A and exercise allotted from section–B are not directly related to each other.

5. *Number of candidates in a group for practical examination should not exceed 12.*

6. In a single group, no experiment be allotted to more than three examinees in the group.

LIST OF EXPERIMENTS :

Note : Each student should perform ***atleast eighteen experiments*** in the laboratory.

I CONDENSED MATTER PHYSICS :

Activities :

(i) Measurement of reverse saturation current in p-n junction diode at various temperatures and to find the approximate value of energy gap.

(ii) To draw forward and reverse bias characteristics of a p-n junction diode and draw a load line.

(iii) Study of a diode as a clipping element.

(iv) To measure the magnetic susceptibility of $FeCl_2$ solution by Quincke's method.

(v) To trace the B-H curves for different materials using CRO and find the magnetic parameters from these.

(vi) To find the conductivity of a given semi-conductor crystal using four probe method.

(vii) To determine the Hall coefficient for a given semiconductor.

II ELECTRONICS AND SOLID STATE DEVICES :

Activities :

(i) To study the response of RC-circuit to various input voltages (square, sine and triangular).

(ii) To measure the efficiency and ripple factors for (a) Half-wave, (b) Full wave, and (c) Bridge rectifier circuits.

(iii) To study the reduction in the ripples in the rectified output with RC, LC and π-filters.

(iv) To draw the characteristics of a Zener diode.

(v) To study the stabilization of output voltage of a power supply with Zener diode.

(vi) To measure and plot Common Emitter Characteristics of a transistor (pnp or npn).

(vii) To plot Common Base Characteristics and determine h-parameters of a given transistor.

(viii) To draw output and mutual characteristics of an FET and determine its parameters.

(ix) To study the gain of an amplifier at different frequencies and to find band-width and gain-band-width product.

(x) To set up an oscillator and study its output on CRO for different V values.

(xi) To study the characteristics of a thermistor and find its parameters.

III NUCLEAR PHYSICS :

Activities :

(i) To draw the Plateau of a GM counter and find its dead time.

(ii) To study the statistical fluctuations using GM counter.

(iii) To study the absorption of beta-particles and determine the end point energy using GM counter. Also determine the absorption co-effficient (for aluminium) from it.

(iv) Verification of Rutherford Scattering experiment-mechanical analogue.

Exercises :

1. Any one exercise based on the above given experiments.

Computer based Activities :

2. To solve simultaneous equations by elimination method.

3. Fitting a straight line or a simple curve of a given data.

4. Convert a given integer into binary and octal systems and vice versa.

5. Inverse of a matrix.
6. Spiral array.

Text and Reference Books :

1. Khandelwal, D.P. : *"A Laboratory Manual of Physics for Undergraduate Classes"*.
2. Arora, C.L. : *"B.Sc. Practical Physics"*.
3. Dixon, C. : *"Numerical Analysis"*.
4. Lipsdutz, S., and Poe, A. : *"Schaum's Outline of Theory and Problems of Programming with Fortran"*.

CHEMISTRY

B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Schemes of Examination

Paper	*Course*	*Teaching Hrs.*		*Max. Marks*
IX	Inorganic Chemistry	60	3 periods per week	45+5 internal assessment
X	Organic Chemistry	60	3 periods per week	45+5 internal assessment
XI	Physical Chemistry	60	3 periods per week	45+5 internal assessment
XII	Laboratory Practicals		6 periods per week	45+5 internal assessment
		Total	**15 periods/week**	**200**

Paper – IX : INORGANIC CHEMISTRY

Max. Marks : 45+5
Time : 3 Hrs.
60 Hours (2 Hrs. week)
3 Periods/Week

OBJECTIVE OF THE COURSE :

To teach the fundamental concepts of Chemistry and their applications, the syllabus pertaining to B.Sc. (GENERAL) (3 Year course) in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

UNIT-I

Metal – Ligand Bonding in Transition Metal Complexes : 11 Hrs.

Limitations of valence bond theory, an elementary idea of crystal – field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal – field parameters.

Thermodynamic and Kinetic Aspects of Metal Complexes: 4 Hrs.

A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes.

UNIT-II

Organometallic Chemistry : 10 Hrs.

Efinition, nomenclature and classification of organometallic compounds. Preparation, properties, bonding and applications of alkyls and aryls of Li, Al, Hg, Sn and Ti, a brief account of metal – ethylenic complexes and homogeneous hydrogenation, mononuclear carbonyls and the nature of bonding in metal carbonyls.

Silicones and Phosphazenes : 5 Hrs.

Silicones and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.

UNIT-III

Bioinorganic Chemistry : 10 Hrs.

Essential and trace elements in biological processes, metalloporphyrins with special reference to haemoglobin and myoglobin. Biological role of alkali and alkaline earth metal ions with special reference to Ca^{2+} ion. Nitrogen fixation.

Hard and Soft Acids and Bases (HSAB) : 5 Hrs

Classification of acids and bases as hard and soft Pearson's HSAB concept, acid-base strength and hardness and softness. Symbiosis, theoretical basis of hardness and softness, electronegativity and hardness and softness.

UNIT-IV

Electronic Spectra of Transition Metal Complexes : 8 Hrs.

Types of electronic transitions, selection rules for *d-d* transitions, spectroscopic ground states, spectrochemical series. Orgel – energy level diagram for d^1 and d^o states, discussion of the electronic spectrum of $[Ti(H_2O)_6]^{3+}$ complex ion.

Magnetic Properties of Transition Metal Complexes : 7 Hrs.

Types of magnetic behaviour, methods of determining magnetic susceptibility, spin-only formula. L – S coupling, correlation of μ_s and μ_{eff} values, orbital contribution to magnetic moments, application of magnetic moment data for 3*d*-metal complexes.

Instructions for paper setters and candidates :

(i) *Examiner will set total of **Nine** questions comprising **Two** questions from each unit and **One** compulsory question of short answer type covering whole syllabi.*

(ii) *The students are required to attempt **Five** questions in all, **One** question from each unit and the compulsory question.*

(iii) *All questions carry equal marks.*

Books Suggested :

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., *Basic Inorganic Chemistry;* 2nd edition, Pubs: John Wiley and Sons, 1995.

2. Lee, J.D., *Concise Inorganic Chemistry;* 4th edition, Pubs: Chapman and Hall Ltd., 1991.

3. Shriver, D.E., Atkins, P.W., Langford, C.H., *Inorganic Chemistry;* 4th edition, Pubs: Oxford University Press, 2006.

4. Dauglas, B., McDaniel, D., Alexander, J., *Concepts and Models of Inorganic Chemistry*; 3rd edition, Pubs: John Wiley and Sons Inc., 1999.

5. Porterfeild, W.W., *Inorganic Chemisty;* Pubs: Addison-Wesley Publishing Company, 1984.

6. Miessur, G.L., Tarr, D.A., *Inorganic Chemistry;* 3rd edition, Pubs: Pearson Education Inc., 2004.

7. Jolly, W.L., *Modern Inorganic Chemistry;* 2nd edition, Pubs: Tata McGraw-Hill Publishing Company Ltd., 1991.

8. Purcell, K.F., Kotz, J.C., *Inorganic Chemistry;* Pubs: W.B. Saunders Company, 1977.

9. Puri, B.R., Sharma, L.P., Kalia, K.C., *Principles of Inorganic Chemistry;* 30th edition, Pubs: Milestones Publishers, 2006-07.

Paper–X : ORGANIC CHEMISTRY

Max. Marks : 45+5
Time : 3 Hrs.
60 Hours (2 Hrs. week)
3 Periods/Week

OBJECTIVE OF THE COURSE :

To teach the fundamental concepts of Chemistry and their applications, the syllabus pertaining to B.Sc. (GENERAL) (3 Year course) in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

UNIT-I

Carbohydrates : **8 Hrs.**

Classification and nomenclature. Monosaccharides, mechanism of osazone formation, interconversion of glucose and fructose, chain lengthening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threo diastereomers. Conversion of glucose into mannose. Formation of glycosides, ethers and esters. Determination of ring size of monosaccharides. Cyclic structure of D (+) – glucose. Mechanism of mutarotation.

Structure of ribose and deoxyribose.

An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

Amino Acids, Peptides, Proteins and Nucleic Acids : **7 Hrs.**

Classification, structure and stereochemistry of amino acids. Acid-base behavior, isoelectric point and electrophoresis. Preparation and reactions of α- amino acids.

Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid – phase peptide synthesis. Structures of peptides and proteins. Levels of protein structure. Protein denaturation/renaturation.

Nucleic Acids : Introduction. Constituents of nucleic acids. Ribonucleosides and ribonucleotides. The double helical structure of DNA.

UNIT-II

Spectroscopy : **10 Hrs.**

Nuclear magnetic resonance (NMR) spectroscopy.

Proton magnetic resonance (^{1}H NMR) spectroscopy, nuclear shielding and deshielding, chemical shift and molecular structure, spin-spin splitting and coupling constants, area of signals, interpretation of PMR spectra of simple organic molecules such as ethyl bromide, ethanol, acetaldehyde, 1, 1, 2-tribromoethane, ethyl acetate, toluene and acetophenone.

Problems pertaining to the structure elucidation of simple organic compounds using UV, IR and PMR spectroscopic techniques.

Synthetic Polymers : **5 Hrs.**

Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler – Natta polymerization and vinyl polymers.

Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes.

Natural and synthetic rubbers.

UNIT-III

Electromagnetic Spectrum: Absorption Spectra : **10 Hrs.**

Ultraviolet (UV) absorption spectroscopy – Absorption laws (Beer – Lambert Law), molar absorptivity, presentation and analysis of UV spectra, types of electronic transitions, effect of conjugation. Concept of chromophore and auxochrome. Bathochromic, hypsochromic, hyperchromic and hypochromic shifts. UV spectra of conjugated enes and enones.

Woodward Fieser Rules and their applications in calculating maximum values of conjugated alkenes (cyclic as well as acyclic) and conjugated carbonyl compounds.

Infrared (IR) absorption spectroscopy – Molecular vibrations, Hooke's law, selection rules, intensity and position of IR bands, measurement of IR spectrum, fingerprint region, characteristic absorptions of various functional groups and interpretation of IR spectra of simple organic compounds.

Organic Synthesis via Enolates : **5 Hrs.**

Acidity of ά-hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate. Alkylation and acylation of enamines.

UNIT-IV

Heterocyclic Compounds : **10 Hrs.**

Introduction : Molecular orbital picture and aromatic character of pyrrole, furan, thiophene and pyridine. Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution. Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole.

Introduction to condensed – five and six – membered heterocycles. Preparation and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis. Skraup synthesis and Bischler-–Napieralski synthesis. Mechanism of electrophilic substitution reactions of indole, quinoline and isoquinoline.

Organometallic Compounds : **5 Hrs.**

Organomagnesium Compounds: The Grignard reagents – Formation, structure and chemical reactions.

Organozinc Compounds : Formation and Chemical reactions.

Organolithium Compounds: Formation and Chemical reactions.

Instructions for paper setters and candidates:

(i) *Examiner will set total of* ***Nine*** *questions comprising* ***Two*** *questions from each unit and* ***One*** *compulsory question of short answer type covering whole syllabi.*

(ii) *The students are required to attempt* ***Five*** *questions in all,* ***One*** *question from each unit and the Compulsory question.*

(iii) *All questions carry equal marks.*

Books Suggested :

1. Morrison, R.T., Boyd, R.N., *Organic Chemistry;* 6th edition, Pubs: Prentice-Hall, 1992.

2. Wade Jr., L.G., Singh, M.S., *Organic Chemistry;* 6th edition, Pubs: Pearson Education, 2008.

3. Mukherji, S.M., Singh, S.P., Kapoor, R.P., *Organic Chemistry;* Pubs: New Age International, 1985, Vols. I. II, III.

4. Carey, F.A., *Organic Chemistry;* 4th edition, Pubs: McGraw-Hill, 2000.

5. Solomons, T.W., *Fundamentals of Organic Chemistry;* 5th edition, Pubs: John Wiley & Sons, 1997.

6. Streitwieser, A., Clayton, Jr., Heathcock, H., *Introduction to Organic Chemistry;* 3rd edition, Pubs: Macmillan Publishing Company, 1989.

Paper–XI : PHYSICAL CHEMISTRY

Max. Marks : 45+5
Time : 3 Hrs.
60 Hours (2 Hrs. week)
3 Periods/Week

OBJECTIVE OF THE COURSE :

To teach the fundamental concepts of Chemistry and their applications, the syllabus pertaining to B.Sc. (GENERAL) (3 Year course) in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

UNIT-I

Elementary Quantum Mechanics : **15 Hrs.**

Black-body radiation, Planck's radiation law, photoelectric effect, heat capacity of solids, Bohr's model of hydrogen atom (no derivation) and its defects, Compton effect.

De Broglie hypothesis, the Heisenberg's uncertainty principle, Sinusoidal wave equation, Hamiltonian operator, Schrodinger wave equation and its importance, physical interpretation of the wave function, postulates of quantum mechanics, particle in a one dimensional box.

Schrodinger wave equation for H-atom, separation into three equations (without derivation), quantum numbers and their importance, hydrogen like wave functions, radial wave functions, angular wave functions.

Molecular orbital theory, basic ideas – criteria for forming M.O. from A.O., construction of M.O.'s by LCAO – H_2^+ ion. Calculation of energy levels from wave functions, physical picture of bonding and antibonding wave functions, concept of σ, σ^*, π, π^* orbitals and their characteristics. Hybrid orbitals – sp, sp^2, sp^3; calculation of coefficients of A.O.'s used in these hybrid orbitals.

Introduction to valence bond model of H_2, comparison of M.O. and V.B. models.

UNIT-II

Spectroscopy : **15 Hrs.**

Introduction : Electromagnetic radiation, regions of the spectrum, basic features of different spectrometers, statement of the Born-Oppenheimer approximation, degrees of freedom.

Rotational Spectrum :

Diatomic molecules. Energy levels of a rigid rotor (semi – classical principles), selection rules, spectral intensity, determination of bond length, qualitative description of non-rigid rotor, isotope effect.

Vibrational Spectrum:

Infrared Spectrum : Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum intensity, determination of force constant and qualitative relation of force constant and bond energies, effect of anharmonic motion and isotope on the spectrum, idea of vibrational frequencies of different functional groups. Raman Spectrum : Concept of polarizability, pure rotational and pure vibrational, Raman spectra of diatomic molecules, selection rules.

Electronic Spectrum :

Concept of potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules and Franck- Condon principle.

Qualitative description of σ, π – and n M.O., their energy levels and the respective transitions.

UNIT-III

Solid State : **10 Hrs.**

Definition of space lattice, unit cell.

Laws of Crystallography – (i) Law of Constancy of Interfacial Angles, (ii) Law of Rationality of Indices, (iii) Law of Symmetry. Symmetry elements in crystals.

X-ray diffraction by crystals. Derivation of Bragg equation. Determination of crystal structure of NaCl, KCl and CsCl (Laue's method and powder method).

UNIT-IV

Photochemistry : **15 Hrs.**

Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of Photochemistry : Grothus – Drapper law, Stark – Einstein law, Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions – energy transfer processes (simple examples). Photochemistry of carbonyl compounds and alkenes.

Instructions for paper setters and candidates :

(i) *Examiner will set total of **Nine** questions comprising **Two** questions from each unit and **One** compulsory question of short answer type covering whole syllabi.*

(ii) *The students are required to attempt **Five** questions in all, **One** question from each unit and the Compulsory question.*

(iii) *All questions carry equal marks.*

Books Suggested :

1. Atkins, P., Paula, J.de, *Atkins, Physical Chemistry;* 8th edition, Pubs: Oxford University Press, 2008.

2. Puri, B.R., Sharma, L.R., Pathania, M.S., *Principles of Physical Chemistry;* 43rd edition, Pubs: Vishal Publishing Co., 2008.

3. Barrow, G.M., *Physical Chemistry;* 6th edition, Pubs: McGraw Hill Company Inc., 1996.

4. Rao, C.N.R., *University General Chemistry;* Pubs: Macmillan of India, 1985.

5. Berry, R.S., Rice, S.A., Ross, J., *Physical Chemistry;* 2nd edition, Pubs: Oxford University Press, 2000.

6. Albert, R.A., Silbey, R.J., *Physical Chemistry;* I edition, Pubs: John Wiley & Sons Inc., 1992.

7. Dogra, S.K., Dogra, S., *Physical Chemistry Through Problems,* Pubs: Wiley Eastern Limited,1991.

8. Levine, I.N., *Physical Chemistry;* 5th edition, Pubs : Tata McGraw Hill Publishing Co. Ltd., 2002.

9. Moore, W.J., *Basic Plhysical Chemistry;* Pubs : Prentice Hall of India Pvt. Ltd., 1983.

10. Metz, C.R., Theory and Problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book Company, 1989.

11. Banwell, C.N., McCash, E.M., *Fundamentals of Molecular Spectrospcopy;* 4th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 1999.

12. Banwell, C.N., McCash, E.M., *Fundamentals of Molecular Spectrospcopy;* 4th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 1999.

13. Levine, I.N., *Quantum Chemistry;* 5th edition, Pubs: Prentice Hall International Inc., 2000.

Paper–XII : LABORATORY PRACTICALS **Max. Marks : 45+5**

INORGANIC CHEMISTRY

Synthesis and Analysis: **6 Periods/ week**

(a) Preparation of sodium trioxalatoferrate (III), Na_3 $[Fe(C_2O_4)_3]$ and determination of its composition by permaganometry.

(b) Preparation of Ni – DMG complex, $[Ni (DMG)_2]$.

(c) Preparation of copper tetraammine complex $[Cu (NH_3)_4] SO_4$.

(d) Preparation of cis-and trans-bisoxalatodiaqua chromate (III) ion.

Instrumentation

Solvent Extraction

Separation and estimation of Mg(II) and Fe(II).

ORGANIC CHEMISTRY

Laboratory Techniques

Column Chromatography

Separation of fluorescein and methylene blue.

Separation of leaf pigments from spinach leaves.

SYNTHESIS OF ORGANIC COMPOUNDS

(a) Aliphatic electrophilic substitution.

Preparation of iodoform from ethanol and acetone.

(b) Aromatic electrophilic substitution.

Nitration

Preparation of m-dinitrobenzene

Preparation of p-nitroacetanilide

Preparation of p-iodoaniline from aniline.

Preparation of methyl orange from N, N-dimethyl aniline and sulphanilic acid.

Halogenation

Preparation of p-bromoacetanilide

Preparation of 2,4,6 – tribromophenol

(c) Oxidation

Preparation of benzoic acid from toluene.

(d) Reduction

Preparation of aniline from nitrobenzene

Preparation of m-nitroaniline from m – dinitrobenzene

Stereochemical study of Organic Compounds via Models

R and S configuration of optical isomers.

E, Z configuration of geometrical isomers

Conformational analysis of cyclohexanes and substituted cyclohexanes.

PHYSICAL CHEMISTRY

Electrochemistry :

(a) To determine the strength of the given acid conductometrically using standard alkali solution.

(b) To determine the solubility and solubility product of a sparingly soluble electrolyte conductomertircally.

(c) To study the saponification of ethyl acetate conductometrically.

(d) To determine the ionization constant of a weak acid conductometrically.

(e) To study the distribution of iodine between water and CCl_4.

(f) To study the distribution of benzoic acid between benzene and water.

Molecular Weight Determination :

(a) Determination of molecular weight of a non–volatile solute by Rast method.

(b) Determination of the apparent degree of dissociation of an electrolyte (e.g. NaCl) in aqueous solution of the substance.

General Instructions to the Examiners :

Note : Practical examination will be of four hours duration & shall consist of the following questions:

Q.No. 1*. Preparation of an inorganic complex : 10 marks

Q.No. 2*. Preparation of an organic compound : 10 marks

Q.No. 3. Physical Chemistry : 11 marks

Students shall be allowed the choice to opt for one experiment out of the three offered. The candidate will write theory, short procedure and calculations of that experiments in the next 10 minutes. Note – Book / Books is/are not allowed during writing.

Q.No. 4. Viva-Voce : 8 marks

Minimum of four questions (2 marks each) be asked on the background of practical course.

Q.No. 5. Note Book : 6 marks

*If a question on preparation is asked, then the students shall be required to give Equation, requirements & short procedure in the first 10 minutes. Note Books are not allowed during writing.

Books Suggested (Laboratory Courses) :

1. Denny, R.C., *Vogel's Quantitative Inorganic Analysis;* 4th edition, Pubs: English Language Book Society, 1985.

2. Harwoor, L.M., *Moody, J., Experimental Organic Chemistry;* 1st edition, Pubs: Blackwell Scientific Publicaitons, 1989.

3. Palmer, W.G., Jamer, C., Swinehart, S., *Experimental Inorganic Chemistry;* 1st edition, Pubs: Perlkin-Elmer Corporation, 1969.

4. Forniss, B.S., Rogers, V., *Vogel's Text Book of Practical Organic Chemistry;* Pubs: Dorling Kindhsky Pvt. Ltd., 1989.

5. Garland, C.W., *Experiments in Physical Chemistry;* 1st edition, Pubs: McGraw Hill Book Company, 1989.

6. Bansal, R.K., *Laboratory Manual of Organic Chemistry;* 3rd edition, Pubs: Wiley Eastern Limited, 1994.

7. Furniss, B.S., Hannaford, A.J., Rogers, V., Smith, P.W.G., Tatchell, A.R., *Vogel's Text Book of Practical Organic Chemistry;* 4th edition, Pubs: Longman group, 1978.

8. Khosla, B.D., Garg, V.C., Gulati, A., *Senior Practical Physical Chemistry;* 11th edition, Pubs: R.Chand & Co., New Delhi, 2002.

9. Das, R.C., Behra, B., *Experimental Physical Chemistry;* Pubs: Tata McGraw Hill Publishing Co. Ltd., 1983.

10. Levitt, B.P., *Findlays Practical Physical Chemistry;* 8th edition, Pubs: Longman group Ltd. London & New York, 1978.

BOTANY

B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

		Time	*Theory*	*Int. Assess.*	*Max. Marks*
Theory Paper-A:	Plant Physiology, Biochemistry and Biotechnology	3 hrs.	68	7	75
Theory Paper-B:	Ecology and Utililzation of Plants	3 hrs.	68	7	75
One practical pertaining to entire syllabus included in both theory papers		4 hrs.	45	5	50
				Total :	**200 marks**

Note : 1. The number of teaching hours for theory and practical per session shall be 120 hrs. and 200 hrs., respectively.

2. There will be a total of nine questions in each papers A & B. Queston No. 1 will be compulsory and will consist of 20 parts (one mark each) comprising 10 MCQ and the rest 10 parts will be of fill-in the blanks covering the entire syllabus in both the theory papers A & B. The remaining 8 questions in papers A & B shall include two questions from each unit. Candidates shall be required to attempt one question from each Unit. Question No. 1 will carry 20 marks and the rest of 8 questions will be of 12 marks each.

Paper-A : PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

Max. Marks : 75
Theory : 68
Int. Assessment : 07

Objective : The basic aim of this paper is to familiarize the students with various concepts of functions and metabolism of plants. The course material of this paper would enable the students to correlate structural diversity of various plant forms with functional differentiation. Study of this paper would help the students in understanding several other applied disciplines of Botany like Agriculture, Plant breeding, Agronomy, Tissue culture, Biotechnology, Horticulture etc.

Teaching Methodology : Teaching methodology includes series of lectures making use of charts, transparencies, LCD, Models, slides, practical demonstrations, extension lectures from experts, field visits, discussions, quiz competitions etc. In practicals, students would be provided with fresh/preserved materials for their morphological and anatomical studies making use of microscopes and binoculars and hands-on tools/equipment etc.

UNIT-I

1. *Solutions and Colloids :* True solutions, electrolytes and non-electrolytes; Colloidal solutions and colloids, types of colloids, characteristics, gels and emulsions.

2. *Plant Water Relations :* Importance of water to plant life; physical properties of water; imbibition, diffusion, osmosis, plasmolysis and deplasmolysis, concept of osmotic potential, water potential and pressure potential; absorption of water, active and passive mechanism of water absorption; transport of water, mechanism and theories to explain ascent of sap; transpiration types, mechanism of opening and closing of stomata, mechanism of transpiration, factors affecting transpiration, antitranspirants.

3. *Mineral Nutrition :* Essential macro and micro elements and their role; mineral uptake; mechanism of mineral uptake.

UNIT-II

1. *Nitrogen and Lipid Metabolism :* Biological nitrogen fixation; Importance of nitrate reductase and its regulation; ammonia assimilation; structure and function of lipids; fatty acid biosynthesis; β–oxidation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.

2. *Proteins :* Classification, role and structure (primary, secondary and tertiary) synthesis of amino acids.

3. *Basics of Enzymology :* Discovery and nomenclature; classification, structure, properties, factors affecting enzyme activity, mechanism of enzyme action.

UNIT-III

1. *Photosynthesis :* Significance, historical aspect; photosynthetic pigments; action spectra and enhancement effects; concept of two photosystems, cyclic and non-cyclic photophosphorylation; Calvin cycle; C_4 pathway; CAM plants; photorespiration; factors affecting photosynthesis; Transport of organic substances : Mechanism of phloem transport, source-sink relationship, factors affecting translocation.

2. *Respiration :* ATP—The biological energy currency; aerobic and anaerobic respiration; Kreb's cycle; electron transport mechanism (Chemi-osmotic theory); redox potential; oxidative phosphorylation; pentose phosphate pathway; Respiratory quotient.

UNIT-IV

1. *Growth and Development :* Definitions; phases of growth and development; kinetics of growth, factors affecting growth; seed dormancy, seed germination and factors of their regulation; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; physiology of senescence, fruit ripening; plant hormones—auxins, gibberellins, cytokinins, abscisic acid and ethylene, history of their discovery, biosynthesis and mechanism of action; photomorphogenesis; phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.

2. *Biotechnology :* Functional definition; basic aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis.

Suggested Readings :

1. Bhatia, K.N. : *Plant Physiology-A Modern Treatise,* Trueman Book Co., Jalandhar, 2009.
2. Bhojwani, S.S. : *Plant Tissue Culture : Applications and Limitations,* Elsevier Science Publishers, New York, USA, 1990.
3. Dennis, D.T., Turpin, D.H. Lefebvre, D.D. and Layzell (eds.) : *Plant Metabolism* (2nd Edition), Longman, Essex, England, 1997.
4. Galston, A.W. : *Life Processes in Plants,* Scientific American Library, Springer-Verlag, New York, U.S.A., 1989.
5. Hopkins, W.G. : *Introduction to Plant Physiology,* John Wiley & Sons, Inc., New York, U.S.A., 1995.
6. Lea, P.J. and Leegood, R.C. : *Plant Biochemistry and Molecular Biology*, John Wiley and Sons, Chichester, England, 1999.
7. Mohr, H. and Schopfer, P. : Plant Physiology, Springer-Verlag, Berlin, Germany, 1995.
8. Raghavan, V. : *Embryogenesis in Angiosperms : A Developmental and Experimental Study,* Cambridge University Press, New York, USA, 1986.
9. Salisbury, F.B. and Ross, C.W. : *Plant Physiology* (4th Edition), Wadsworth Publishing Co., California, USA, 1992.
10. Srivastava, H.N.. : Plant Physiology, Biochemistry & Bio-technology, Pradeep Publication, Jalandhar, 2008.
11. Srivastava, H.S.. : *Plant Physiology, Bio-chemistry & Bio-technology,* Rastogi Publications, Meerut, 2008.
12. Taiz, L. and Zeiger, E. : *Plant Physiology* (2nd Edition), Sinauer Associates, Inc., Publishers, Massachusetts, USA, 1988.
13. Vasil, I. K. and Thorpe, T. A. : *Plant Cell and Tissue Culture,* Kluwer Academic Publishers, The Netherlands, 1994.

Paper B : ECOLOGY AND UTILIZATION OF PLANTS

Max. Marks	:	75
Theory	:	68
Int. Assessment	:	07

Note : 1. The number of teaching hours for theory and practical per session shall be 120 hrs. and 200 hrs., respectively.

2. There will be a total of nine questions in each papers A & B. Queston No. 1 will be compulsory and will consist of 20 parts (one mark each) comprising 10 MCQ and the rest 10 parts will be of fill-in the blanks covering the entire syllabus in both the theory papers A & B. The remaining 8 questions in papers A & B shall include two questions from each unit. Candidates shall be required to attempt one question from each Unit. Question No. 1 will carry 20 marks and the rest of 8 questions will be of 12 marks each.

Objective :

The basic objective of this paper is to make students aware about the role of environment in causing structural and functional variation in plants. Since the present day problems of varied nature like pollution, Global Warming etc. are directly or indirectly related to ecology, it is more than desired to provide the students with knowledge of basic concepts of ecology. The second part of this paper is aimed to give an insight into plant wealth such as medicinal plants; crop plants; beverages; spices; condiments; sugar, fiber pulp & oil yielding plants of commercial & economic importance. Both the aspects of this paper give a sound basis of ecology and economic botany so that students can venture into fields like Environmental Biology, Conservation Biology, Foresty, Agriculture, Horticulture Crop production etc.

Teaching Methodology : Teaching methodology includes series of lectures making use of charts, transparencies, LCD, Models, slides, practical demonstrations, extension lectures from experts, field visits, discussions, quiz competitions etc. In practicals, students would be provided with fresh/preserved materials for their morphological and anatomical studies making use of microscopes and binoculars and hands-on tools/equipment etc.

SECTION-I : ECOLOGY

UNIT-I

1. Definition, scope, relationship with other sciences.

2. *Plant Environment :* Climatic, edaphic, topographic and biotic factors affecting growth and distribution of plants.

3. *Ecosystem :* Concept, structure; abiotic and biotic components; trophic levels, food chain, food web, ecological pyramids, energy flow, biogeochemical cycles of carbon, nitrogen and water.

UNIT-II

1. *Community Ecology :* Community characteristics, frequency, density cover, life forms, biological spectrum; ecological succession – Hydrosere and Xerosere.

2. *Applied Ecology :* (a) Air, water and soil pollution and their control.
   (b) Conservation and management of natural resources (renewable and non-renewable)

SECTION-II : UTILIZATION OF PLANTS

UNIT-III

1. *Crop Production :*
   Area of cultivation, soil requirement, cultivation practices and high yielding varieties of :
   (i) Cereals (Wheat, Rice and Maize).
   (ii) Fibres (Cotton).
   (iii) Vegetables (Potato).
   (iv) Fruits (Mango, Grapes, Lemon).
   (v) Sugar-yielding plants (Sugarcane).
   (vi) Oil-yielding plants (Groundnut, Mustard).

2. Brief introduction on genetically modified crops.

UNIT-IV

1. *Elementary Knowledge of the following plants (Botanical names, families, parts used and economic importance) :*
   (i) Wheat, Maize, Rice, Moong, Gram (Food).
   (ii) Teak, Shisham, Deodar, Sal (Timbers).
   (iii) Cotton, Jute, Coir, Flax (Fibres).
   (iv) Fennel, Coriander, Turmeric, Ginger, Mint, Clove (Spices and Condiments).
   (v) Bamboo, Eucalyptus (Pulp plants).
   (vi) Liquorice, Belladona, Aconite, Ashwagandha, Arjun, Poppy, Amla (Medicinal plants).
   (vii) Tea and Coffee (Beverages).

2. *Forestry :* Forest conservation, wood seasoning and its preservation.

Suggested Readings :

1. Kochhar, S.L. : *Economic Botany in Tropics,* 2nd Edition, Macmillan India Ltd., New Delhi, 1998.
2. Kormondy, E.J. : *Concepts of Ecology,* Prentice-Hall of India Pvt. Ltd., New Delhi, 1996.
3. Mackenzie, A. *et al.* : Instant Notes in Ecology, Viva Books Pvt. Ltd., New Delhi, 1999.
4. Odum, E.P. : *Basic Ecology,* Saunders, Philadelphia, 1983.
5. Sambamurthy, A.V.S.S. and Subramanyam, N.S. : *A Textbook of Economic Botany,* Wiley Eastern Ltd., New Delhi, 1989.
6. Sharma, O.P. : *Hill's Economic Botany* (Late Dr. A.F. Hill, Adapted by O.P. Sharma), Tata McGraw Hill Co. Ltd., New Delhi, 1996.
7. Simpson, B.B. and Conner-Oghorzaly, M. : *Economic Botany – Plants in Our World,* McGraw Hill, New York, 1986.

Suggested Laboratory Exercises :

Plant Physiology :

1. To determine osmotic pressure of cell sap by plasmolytic method.
2. To demonstrate imbibition pressure using :
   (i) Imbibition pressure apparatus.
   (ii) Plaster of Paris cone.
3. To demonstrate osmosis through animal membrane/potato osmoscope.
4. To demonstrate plasmolysis and deplasmolysis.
5. To demonstrate mechanical and electrical adsorption.
6. To demonstrate the measurement of transpiration using simple photometer.
7. To demonstrate transpiration pull.
8. To study the effect of light intensity, and wind velocity on the rate of transpiration using Ganong's photometer.

9. To compare the rate of transpiration from the two sides of a leaf using :

   (i) Vaseline method.

   (ii) Cobalt chloride method.

10. To demonstrate the mechanism of opening and closing of stomata.

11. To demonstrate the path of ascent of sap.

12. To demonstrate that chlorophyll is necessary for photosynthesis.

13. To demonstrate that light is necessary for photosynthesis.

14. To demonstrate that CO_2 is essential for photosynthesis.

15. To demonstrate evolution of oxygen during photosynthesis in an aquatic plant.

16. To study the effect of light intensity and CO_2 concentration on the rate of photosynthesis using an aquatic plant.

17. To demonstrate aerobic respiration using flask method.

18. To demonstrate anaerobic respiration in germinating seeds or yeast.

19. To demonstrate the measurement of respiratory quotient using Ganong's respirometer.

20. To demonstrate the activity of amylase.

21. To demonstrate the activity of catalase in plant tissue (germinating seeds).

22. To demonstrate phototropism.

23. To demonstrate geotropism using clinostat.

24. To separate chlorophyll pigments by solvent method.

25. To perform chemical analysis of plant ash for K, Ca, Fe^{++}, Fe^{+++}, B, Mn, S and Mg.

26. To test for the presence of starch, proteins, amino acids and reducing sugars in plant material.

Ecology and Utilization of Plants :

1. Study of ecological adaptations in external characters of :
   Hydrilla, Potamogeton, Ceratophyllum, Vallisneria, Lemna, Eichhornia, Nelumbium, Calotropis, Nerium, Acacia, Zizyphus, Casuarina, Capparis, Asparagus, Ruscus, Opuntia, Euphorbia royleana.

2. To prepare permanent stained slide to show ecological adaptations in the internal structure of the following :

   (a) T.S. stem of *Hydrilla*.

   (b) T.S. leaf of *Potamogeton* and *Vallisneria*.

   (c) T.S. leaf and petiole of *Eichhornia*.

   (d) T.S. leaf and petiole of *Nelumbium*.

   (e) T.S. leaf of *Nerium.*

   (f) T.S. stem of *Casuarina* and *Capparis*.

3. Identification and morphology of economically important part/s of crop plants mentioned below : Cereals (wheat, rice); Fibres (cotton); Vegetables (potato); Fruits (mango, grapes, lemon); sugar-yielding plants (sugarcane) and oil-yielding plants (groundnut, mustard).

4. To determine soil pH using pH paper/solution/pH meter.

5. To determine water holding capacity of soil.

6. To assess soil texture through ball-making technique.

Guidelines for Botany Practical Examination :

Max. Marks	:	50
Practical	:	45 marks
Internal Assessment	:	05 marks
Time	:	4 Hours

1. Write material required, procedure and precautions for physiology experiments A (to be announced by the examiner). Perform the experiment, record observations, calculations if any, and results and show the experiment to the examiner. 11

2. Write procedure of physiology experiment B (minor experiment to be announced by the examiner). Perform the experiment and show it to the examiner after recording observations. 5

(a) Identify and write illustrated ecological note pertaining to external characters of specimen C. 4

(b) Identify and cut T.S. of stem, leaf or petiole (to be announced by the examiner) of specimen D. Make its permanent stained slide and show it to the examiner. Draw its labelled diagram and write its anatomical characters of ecological importance. 7

Identify and write illustrated morphological notes on specimens E and F giving their economic importance. 8

Practical Note-Book. 5

Viva-Voce. 5

ZOOLOGY

B.Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Paper-A	**:**	Developmental Biology & Genetics	75 (67 + 8) marks
Paper-B	**:**	Applied Zoology	75 (67 + 8) marks
Practical	**:**	One paper covering the entire syllabus of both the papers	50 (45 + 5) marks

Note : The number of hours for Theory and Practical per week shall be 5 hours and 4 hours respectively.

OBJECTIVES OF THE COURSE :

The syllabus pertaining to B.Sc. (General) Part-III, in the subject of Zoology has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Zoology working in the Panjab University, Chandigarh and affiliated colleges.

The syllabus contents are duly arranged section wise as well as unit wise. The contents are included in such manner so that due importance may be given to skill oriented components.

The course contents are also given due stress for excursion/field trips to Zoological Parks, Sea-shores, Hill Stations, Museum, Fossil Park and Apiary/godowns for better academic outlook. The Department of Zoology, P.U., Chandigarh usually organizes workshop/seminars from time to time for updating the teachers.

Paper-A : DEVELOPMENTAL BIOLOGY AND GENETICS (ZOO 301)

Max. Marks	:	75
Theory	:	67 marks
Internal Assessment	:	8 marks
Time	:	3 Hours

UNIT-I

Gametogenesis with particular reference to differentiation of spermatozoa : vitellogenesis; role of follicle/subtesticular cells in gametogenesis.

Egg maturation : egg membranes : polarity of egg.

Fertilization; parthenogenesis.

Fate maps of chick and frog embryos.

UNIT-II

Cleavage patterns; Cleavage; determination and differentiation, development upto three germ layers and their fate in *Herdmania, Amphioxus*, frog chick and rabbit.

Foetal membranes, their formation and role. Mammalian placenta – Its formation, types and functions. Tissue interactions, basic concepts of organizers and inductors and their role.

Metamorphosis in *Herdmania* and *Rana* (frog).

UNIT-III

Modification of Mendelian ratios :

Non-allelic gene interaction, Modified F_2 ratios.

(9:7, 9:3:3:1, 12:3:1, 13:3,15:1,9:6:1).

Gene modifications due to incomplete dominance, lethal factors (2:1), Pleiotropic genes.

Multiple Alleles : Blood group inheritance, eye colour in *Drosophila*, pseudo-allelism.

Multiple Factors : Qualitative and quantitative characters, inheritance of quantitative traits (skin colour in man).

Linkage, crossing over and recombination : Linkage, sex-linked characters, crossing over, frequency of crossing over, cytological basis of crossing over, synaptonemal complex. Recombination in Fungi (tetrad analysis).

Gene and Genetic Code : Structure of nucleic acids (DNA & RNA). Replication of DNA and transcription. Expression of gene (protein synthesis in Prokaryotes and Eukaryotes). Properties of genetic code, codon assignment, wobble hypothesis, split and over-lapping genes. Evolution of genes.

Extranuclear inheritance : Chloroplast with special reference to *Mirabilis jalapa* and kappa particles in *Paramoecium*.

UNIT-IV

Mutations : Spontaneous and induced mutations, physical and chemical mutagens. Detection of mutations in Maize and *Drosophila*. Inborn errors of metabolism in man (Phenylketonuria, Alcaptonuria, Albinism). Somatic mutations and carcinogenesis.

Regulation of gene expression in prokaryotes (Operon model) and in eukaryotes.

Population genetics : Equilibrium of gene frequencies and Hardy Weinberg Law.

Genetic recombination in bacteria (conjugation, transduction and transformation) plasmids.

Applied Genetics : Recombinant DNA, genetic cloning and its applications in medicine and agriculture, DNA finger printing.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 10 parts of 1½ marks each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

PRACTICALS : Practical based on Theory Paper ZOO 301 (ZOO 351)

A. Genetics :

1. Demonstration of Law of segregation, Independent assortment and epistasis (use of coloured beads or capsules etc.). Numericals for segregation and Independent assortment.
2. Segregation demonstration in preserved material (Maize).
3. Cytoplasmic inheritance in *Mirabilis jalapa*.
4. Inheritance of other human characteristics, ability to taste, PTC, thiourea.
5. Comparison of variance in respect of pod length and number of seeds/pods.
6. Calculation of gene frequencies and random mating (coloured beads or capsules).
7. Study of polytene chromosomes of *Chironomus*/*Drosophila* through permanent slide.
8. Dermatographics : Palm print taking and finger tip patterns.

B. Frog Embryology :

1. Collection of spawn.
2. Identification of stages and preservation.
3. Preparation of permanent/temporary slide of representative developmental stages of frog.
4. Study of the development of frog from permanent slides.
5. Window preparation and identification of stages of development in chick egg.
6. Study of the development of chick embryo from permanent slides upto 96 hours.
7. Study of the following prepared slides :
   a. Stages of gametogenesis, structure of egg and sperm of a mammal.
   b. Larva of *Herdmania*.

Books Recommended (Latest Edition)

1. De Robertis, E.D.P, De Robertis, E.M.F. : *Cell and Molecular Biology,* W.B. Saunders Co., Philadelphia, 1995.
2. Powar, C.B. : *Cell Biology,* Himalaya Publishing House, Bombay, 1999.

3. Swanson, C.P., Merz, T. and Young, W.J. : *Cytogenetics – The Chromosome in Division, Inheritance and Evolution,* Prentice Hall, 1981.

4. Gupta, P.K. : *Cytology, Genetics and Molecular Biology,* Rastogi Publishers, Meerut, 1993.

5. Chaudhry, S. and Sharma, A : *PV's Cytology & Ecology,* S. Vikas & Co., Jallandhar, 2003.

6. Ballinsky, B.I. : *An Introduction to Embryology*, 5th Edition, Saunders Co., 1981.

7. Gilbert, S.F. : *Developmental Biology,* Sinauer Ass. Inc. Publ., 2000.

8. Urspaung, H. : *Major Problems in Developmental Biology,* Academic Press, New York, 1966.

9. Gardner, E.J. Simmons, M.J. and Snustad, D.P. : *Principles of Genetics,* 8th ed., John Wiley and Sons, Inc., New York, 2004.

Paper-B : APPLIED ZOOLOGY

Max. Marks	:	75
Theory	:	67 marks
Internal Assessment	:	8 marks
Time	:	3 Hours

Note : Students are required to opt any one of the following:

1. Medical Zoology and Medical Laboratory Technology.
2. Economic Entomology and Pest Management.
3. Inland Fisheries & Aquaculture.

OPTION-I : MEDICAL ZOOLOGY & MEDICAL LABORATORY TECHNOLOGY (ZOO 302)

UNIT-I

Introduction to parasitology (pertaining to various terminologies in use).

Brief introduction to pathogenic microbes. Viruses, Rickettsiae, Spirochaetes and Bacteria.

Brief accounts of life history, mode of infection and pathogenicity of the following pathogens with reference to man; prophylaxis and treatment:

(a) Pathogenic protozoans : *Entamoeba,Trypanosoma, Leishmania, Giardia, Trichomonas;* and *Plasmodium.*

(b) Pathogenic helminthes:*Fasciolopsis, Schistosoma, Echinococcus, Ancylostoma, Trichinella, Wuchereria, Dracunculus* and *Oxyuris*.

Life cycle, disease caused and control measures of arthropod vectors :

Anopheles stephensi, A culicifaces, Aedes aegypti A. albopictus, *Culex pipien satigeans,* (*C.trinaenilorhynchus*), *Mansonia* sp. *Xenosylla, Cheopsis, Pediculus*.

UNIT-II

Epidemic diseases, such as typhoid, cholera, small pox; their occurrence and eradication programmes. Brief introduction to human defence mechanisms.

Humoral and cell mediated immune-response, Antigens-physical & chemical properties, Antibodies - structure and function of immunoglobulin M, G, A, E and D.

Antigen and antibody interactions : Serodiagnostic assays.

Vaccines.

UNIT-III

Laboratory safety rules, hazards and precautions during sample collection and laboratory investigations.

Laboratory techniques : Colorimetry, Microscopy, Autoclaving. Centrifugation, Spectrophotometry.

Haematology : Collection of blood (Venous and Capillary), Anticoagulants (merits and demerits), Romanowsky's stains, Total RBC count, Erythrocyte sedimentation rate, TLC, DLC, Eosinophil count, Platelet Count, Reticulocyte count.

UNIT-IV

Bacteriology : Sterilisation, (dry heat, moist heat, autoclave, filtration), Disinfection, Staining techniques (gram's stain, AFB stain, etc.), Culture media (Defined & Synthetic media & routine laboratory media), Bacterial culture (aerobic and anaerobic), Antibiotic sensitivity.

Biochemistry : Protein estimation, Estimation of blood, urea, sugar and urine analysis.

Histopathology : Common fixatives and staining techniques, Histochemistry : Principle and method :

Staining of carbohydrates, proteins and fats with bromo phenol blue, Periodic acid Schiff, Sudan Black blue and Feulgen reaction.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 10 parts of 1½ marks each. Two questions are to be set from each unit. One question is to be attempted from each unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

Practical based on Theory Paper ZOO 302 (ZOO 352)

1. Demonstration of safety rules in laboratory like proper handling of patients specimens and disposal of syringes, needles etc.
2. Demonstration of the use of autoclave, centrifuge and spectrophotometer.
3. Cleaning and sterilization of glassware using hot air oven, autoclave etc.
4. Demonstration of parts of microscope, its functioning and care.
5. Processing of clinical samples for culture and identification of pathogens : blood, urine and stool.
6. Estimation of haemoglobin using Sahli's haemometer.
7. Preparation of thick and thin film for malarial parasite.
8. Counting of WBC, RBC & DLC.
9. Examination of stool for demonstration of intestinal parasites.
10. Study of permanent slides and specimens of parasitic protozoans, helminthes and arthropods mentioned in theory syllabus.
11. Analysis of blood group, A, B, AB, O and Rh.
12. ESR, haematocrit, bleeding time, coagulation time, prothrombin time.
13. Estimation of blood sugar and protein.
14. Fixation, embedding, cutting of tissue sections and their staining (Routine Haematoxytin and Eosin and special staining with BPB, PAS, SBB and Feulgen reaction).

Suggested Readings :

1. Baker, F.J., and Silverton, R.E. : *Introduction to Medical Laboratory Technology,* 6th edition, Butterworth and Co. Ltd., 1985.
2. Cheesborough, M. : *Medical Laboratory Technology for Tropical Countries,* 2nd edition, Butterworth and Co. Ltd., 1987.
3. Talib, V.H. : *Essential Laboratory Manual,* Mehta Publishers, New Delhi, 1999.

4. Goldsby, R.A., Kindt, T.J., Osborne, B.A. and Kuby, J. : *Immunology,* 6th edition, Freeman, W.H. & Co., New York, U.S.A., 2007.

5. Chatterjee, K.D. : *Parasitology, Protozoology and Helminthology,* 13th ed. CSB Publishers and Distributors Pvt. Ltd., 1995.

6. Garcia, L.S. : *Diagnostic Medical Parasitology,* 4th ed., ASM Press Washington, 2001.

7. Parija, S.C., : *Text Book of Medical Parasitology,* Protozoology and Helminthology, 1st edition, 2001.

OPTION-II : ECONOMIC ENTOMOLOGY & PEST MANAGEMENT (ZOO 303)

UNIT-I

Systematic position, habits and nature of damage of the following pests of crops and vegetables :

I. Sugarcane :

1. Sugarcane leaf hopper (*Pyrilia perpusila*) alongwith life cycle and control measures.
2. Sugarcane top borer (*Scirpophaga nivella*)
3. Sugarcane stem borer (*Chilotrea infuscatellus*)

II. Cotton :

1. Pink bollworm (*Pectinophora gossypiella*) alongwith life cycle and control measures.
2. Red cotton bug (*Dysdercus cinglulatus*)
3. Cotton grey weevil (*Myllocerus maculosus*)
4. Surface grasshopper (*Chrotogonus trachypterus*)
5. Cotton jassid (*Empoasca devastans*)

III. Paddy :

1. Rice Gundhy Bug (*Leptocorisa varicornis*) alongwith life cycle and control measures.
2. Rice grasshopper (*Hieroglyphyus banian*)
3. Rice Hispa (*Dicladispa armigera*)

IV. Wheat :

1. Wheat stem borer (*Sesamia inferens*) alongwith life cycle and control measures.
2. Termites
3. Aphids, Jassids

V. Vegetables :

1. Red pumpkin beetle (*Aulacophora foveicollis*)
2. Pumpkin fruit fly (*Dacus cucurbitae*) alongwith life cycle and control measures.
3. Hadda beetle (*Epilachna vigintioctopunctata*)

UNIT-II

VI. Pests of Stored Grains : Systematic position, habits and nature of damage of the following pests of stored grains :

1. Pulse Beetle (*Callosobruchus maculates*) along with life cycle and control.
2. Rice weevil (*Sitophilus oryzae*)
3. Khapra beetle (*Trogoderma granarium*)
4. Rust red flour beetle (*Tribolum castaneum*)
5. Lesser grain borer (*Rhizopertha dominica*)
6. Rice moth (*Corcyra cephalonica*)

Systematic position, disease caused and control of the following insects of Medical and Veterinary importance :

1. Mosquitoes
2. Sand fly (*Phlebotomus minutus*)
3. House fly (*Musca domestica*) along with life cycle of house fly.
4. Horse fly (*Tabanus striatus*)
5. Blow fly (*Calliphora erythrocephala*)
6. Warble fly (*Hypoderma lineatum*)
7. Poultry louse (*Menopon gallinae*)
8. Sucking louse/(*Haematopinus surysternus*)
9. Fleas

UNIT-III

Development of Insects : Different types of metamorphosis along with a study of different kinds of larvae and pupae.

Comparative studies of mouth parts in Grasshopper, Honeybee, Butterfly, Red- Cotton bug and Mosquito.

Major modifications in the antennae and legs of insects.

1. Sericulture

1. Species of silkworm
2. Requirements of Sericulture Industry
3. Grainage Management
4. Pre and Post-cocoon processing (Stifling & Reeling)
5. Diseases of silkworm.

2. Apiculture

(i) Species of Honeybees

(ii) Flora for Apiculture

(iii) Methods & Appliances of Bee Keeping

(iv) Products - (a) Honey (b) Bee wax (c) Propolis (d) Pollen (e) Royal Jelly (f) Bee Venom

(v) Diseases of Honey bee

3. Lac Culture :

(i) Species of Lac culture (ii) Host Plants (iii) Cultivation of Lac (iv) Processing of Lac Industry (v) Diseases of Lac Cultivation.

UNIT-IV

I. Biological Control : History; Techniques in biological control, Agents of biological Control

(a) Vertebrates (b) Nemathelminthes (c) Arthropods (d) Protozoan; Microbial control with the help of Bacteria, Virus and Fungi.

II. Chemical Control :

History; Types and Classification of Insecticides (a) Insecticides of plant origin with special reference to vicotine; Pyrethrum; Rotenone and Azadirachtin (b) Chlorinated Hydrocarbons insecticides with special reference to DDT; Toxaphene; BNC; Chlordane; Aldrin; Endrin and Endosulfan (c) Organophosphorus Insecticides with special reference to Malathion; TEPP; Parathion and DDVP (d) Carbamate Insecticides with reference to Carbaryl and Carbofuran (e) Fumigants with reference to Hydrogen cyanide; Methyl bromide; Ethylene dichloride; Carbon tetrachloride and Aluminium phosphide.

III. Recent Methods of Pest Control :

(a) Sterile insect release methods (b) Behavioural control involving use of Pheromones (c) Integrated pest control : Introduction of IPM : Pre-requisites; Implementation Strategy; Framework of IPM programme and perspectives in IPM.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 10 parts of 1½ marks each. Two questions are to be set from each unit. One question is to be attempted from each Unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

Practical based on Theory Paper ZOO 303 (ZOO 353)

1. Feeding apparatus : Mouth parts of honey bee, butterfly and red cotton bug by preparing permanent mounts.
2. A study of different types of larvae and pupae of insects.
3. External morphology and identification marks of the crops and vegetables pests : *Pyrilla perpusilla* (Sugarcane leaf hopper), *Pectinophora gossypiella* (Pink bollworm), *Leptocorisa varicornis* (Gundhy bug) *Hieroglyphus banian* (Paddy grass hopper), *Dacus cucurbitae* (Pumpkin fruit fly).
4. External morphology and identification marks of the following stored grain pests : *Sitophilus oryzae* (Rice weevil), *Tribolium castaneum* (Rustred flour beetle), *Rhizopertha dominica* (Lesser grain borer/susri),*Trogoderma granarium* (Khapra beetle), *Callosobruchus maculatus* (Pulse beetle/Dhora).
5. External morphology and identification marks of the following insects of Medical/Veterinary importance-Mosquitoes (Culex, Anopheles and Aedes), house fly, blow fly, warble fly, and horse fly.
6. A study of life stages of silk worm and honey bees.
7. Collection of insects representing different orders; storage and preservation of insect material.
8. Structure and working of common sprayers : Hand Compression sprayer, Knap sack sprayer.
9. Visit to apiary and godowns for study of infestation.

Books Recommended :

1. Attwal, A.S. : *Agricultural Pests of India and South East Asia,* Kalyani Publishers, New Delhi (1991).
2. Nair, M.R.G.K. : *Insects and Mites of Crops in India,* ICAR, New Delhi (1975).
3. Kumar, A. & Nigam, P.M. : *Economic and Applied Entomology,* Emkay Publications (1991).
4. Matheson, R. : *Medical Entomology,* Comstock Publishing Company, Inc. (1950).
5. Metcalf , R.L. & Metcalf, R.A. : *Destructive and Useful Insects,* McGraw Hill Book Company, Inc. New York, Toronto, London (1951).
6. Dent, D. : *Integrated Pest Management,* Chapman & Hal, London, NewYork, Tokyo, Madras (1995).
7. House, P., Sevens, I. and Jones, O. : *Insect Pheromones and their use in Pest Management,* Chapman & Hall, London, New York, Tokyo, Madras (1998).
8. Mishra, R.C. : *Honey Bees and their Management in India,* ICAR Publication New Delhi, (1995).

Option-III : AQUACULTURE (ZOO 304)

UNIT-I

History of inland fisheries in India.

Morphology of a typical fish (carp, cat-fish, freshwater eel, perch).

Structure of mouth of different fishes in relation to feeding habits.

Identification and classification of important fishes of Punjab, Haryana & Himachal Pradesh.

Bionomics of *Labeo rohita, Catla Catla, Cirrhinus mrigala, Wallago attu.*

UNIT-II

Exotic Fishes : History, their introduction, morphology, their role in fish culture, impact on native fish fauna.

Induced Breeding : History, technique, chemicals involved in induced breeding, impact on fish culture Pond Culture : Construction of pond, types of pond, hydrobiological factors of water and soil of a fish pond, fertilization of pond, maintenance of pond.

Aquatic weeds and their control both biological and chemical.

UNIT-III

Riverine fisheries of river Sutlej and Beas.

Reservoir fisheries : Gobindsagar, Pong Dam.

Culture Systems : Conventional, extensive, intensive, monoculture,polyculture.

Integrated fish farming : Duck-cum-fish farming, Dairy-cum-fish farming, Cattle-cum-fish farming and Poultry-cum-fish farming.

UNIT-IV

Sewage fed fisheries

Cold water fisheries : Mahseer fisheries and trout fisheries

Fish Diseases and their control : Viral, bacterial, fungal, helminth, crustacean,diseases due to unhygienic conditions, diseases during transportation.

Fish by-products

Marketing of fish : Fresh fish and preservation of fish.

Note : Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 10 parts of 1½ marks each. Two questions are to be set from each unit. One question is to be attempted from each Unit. In all, Five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

PRACTICALS : Practical based on Theory Paper ZOO 304 (ZOO 354)

1. Morphology of a Carp, Cat fish and Perch.

2. Morphometric and meristic characters of a typical fish.

3. Identification of the following fishes using keys to the species :

   Notopterus spp. ; *Labeo rohita, L. colbasu, L. bata, Cirrhinus mrigala, Catla Catla, Puntius sarana, Tor putitora, Schizothorax, Aorichthys seenghala, Wallago attu, Callichrous padda, Bagarius bagarius, Heterpneustus fossilis, Channa maruluis, C. striatus, Xenentondon cancila, Cyprinus carpio, Hypophthalmichthys molitrix,Ctenopharyngodon idella, Colisa fasciatus, Mastacembelus armatus.*

   For the identification of the fishes, the students can use already prepared keys or can prepare their own keys.

4. Determination of food and feeding habits of locally available fishes on the basis of stomach analysis adopting the following methods :

   a. Frequency occurrence method

   b. Feeding intensity

   c. Point method.

5. Determination of maturity stages (both male and female) of any commercial fish (preserved specimens).

6. Preparation of permanant slides of phytoplanktons and zooplanktons which constitute the food of commercial fishes. Their identification and study of important characters.

7. Identification of aquatic weeds of a fish pond.

8. Estimation of following chemical parameters of the water of a fish pond:

   a. Temperature

   b. pH

   c. Dissolved oxygen

   d. Phosphates

   e. Total dissolved solids

   f. Nitrates

   g. Hardness

   h. Chlorides

9. Examination of diseased fishes.

10. Visits to various fish ponds and fish market.

Suggested Readings :

1. Jhingran, V.G. : *Fish and Fisheries of India,* Hindustan Publishing Corporation of India, Delhi, 1991.

2. Day, F. : *Fishes of India,* Vol. I & II Reprinted Edition Jagmander Book Agency, New Delhi, 1994.

3. Johal, M.S. & Tandon, K.K. : *Monograph on the Fishes of Reorganised Punjab,* Pb. Fishries Bulletin, Vols. I & II1979, 1980.

4. Agarwal, S.C. & Johal, M.S. : *Fishery Development,* Narendra Publishing House, Delhi, 1997.

5. Johal, M.S. & Tandon, K.K. : *Fishes of Punjab,* Res. Bull., Panjab University, Vol. 32, pp. 143-154, 1981.

6. Karl, F.L. : *Freshwater Fishery Biology,* Wm. C-Brown Company Publ., Dubuque, IOWA, USA, 1969.

7. Brian R. Murphy & David W. W. (Ed.) : *Fisheries Techniques : American Fisheries Society*, Bethesda Maryland, USA, 1996.

Guidelines for the conduct of Practical Examinations, (ZOO 351)

Max. Marks	:	50
Practical Exam.	:	45 marks
Internal Assessment	:	5 marks
Time	:	4 Hours

1. Demonstrate the law of independent assortment/segregation epistasis from the material provided. Identify the characters involved showing the dominance/recessiveness of characters. (5)

2. Calculate the gene frequency from a known sample of characteristics using Hardy-Weinberg Law.

OR

Make a dermatographic print of your finger tips or palm pattern and classify the various visible pattern with the help of diagrams and demonstrate it to the examiner. (4)

3. Make a permanent/temporary preparation and identify the material provided. Write a brief note on it. (4)

4. Identify the slides A & B giving two reasons for each identification. (4)

5. Viva-Voce (4)

6. Practical Note Book (4)

Option–I (ZOO 352)

7. To make a permanent stained preparation of blood smear showing different stages of *Plasmodium*/bacteria/sputum. Write briefly about your observation under the microscope. Draw a labeled sketch. (2+1+1) = 4

OR

To test the given sample of urine/stool under the microscope for its pathology. Write the procedure adopted. (2+2) = 4

8. To identify the specimens C & D. Write the disease caused by each & two reasons for their identification. (1+1+1) × 2 = (6)

9. To find out the blood groups/erythrocyte sedimentation rate/bleeding time/ coagulation time/prothrombin time of the given sample and write the procedure adopted. (4)

OR

To identify the slide F-G and write diagnostic features. (4)

10. Determine RBC/WBC counts, DLC of the given blood sample. Write the procedure adopted. (6)

OR

Demonstrate Feulgen/PAS reaction in given tissue section. (6)

Option-II (ZOO 353)

7. To make a permanent preparation of the mouth parts of the given specimen. Make a labelled sketch of the same. (8)

8. To identify specimens C.D. & E. belonging to crop pests, stored grain pests and insects of medical importance respectively. Give one outstanding morphological character and one identification mark of each. Mention their scientific names and economic importance also. (2.5 each) = 7.5

9. To mention the type of larva/pupa/stages of life history of silk worm and honeybee. Write a note on its external morphology. (2)

10. To name the apparatus provided and explain its structure and working. (2.5)

Option-III (ZOO 354)

7. To identify the given sample C & D and write their morphometric and meristics characters. Make labeled sketch of given samples. (8)

8. To determine the food contents of the specimens E. and F. (5)

9. To identify slides G & H and write two identifying characters of each. (5)

10. To determine the pH of a given sample of pond water by pH paper. (2)

ELECTRONICS

B. Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Note :

1. There will be two theory and one laboratory (practical) courses.
2. The number of lectures per week will be three for each theory paper.
3. The number of lectures per week will be six for practicals.
4. The time duration for each theory paper will be three hours.
5. The time duration for practical examination will be 4 hours.
6. The use of Non-programmable calculators will be allowed in the examination centre, but these will not be provided by the University/College.

Distribution of marks and total teaching hours will be as under :

Paper A :	Data Acquisition Systems	:	50 marks	Total Teaching Hours	75
Paper B :	Microcontrollers and Applications	:	50 marks	Total Teaching Hours	75
Practicals :		:	50 marks	Total Teaching Hours	125
Project Work :		:	50 marks		

Each paper will consist of five units :

UNIT-I : There will be two questions from this unit. Each question will have two parts. Only one question is to be attempted. Each question will carry ten marks.

UNIT-II : There will be two questions from this unit. Each question will have two parts. Only one question is to be attempted. Each question will carry ten marks.

UNIT-III : There will be two questions from this unit. Each question will have two parts. Only one question is to be attempted. Each question will carry ten marks.

UNIT-IV : There will be two questions from this unit. Each question will have two parts. Only one question is to be attempted. Each question will carry ten marks.

UNIT-V : There will be eight questions of small answer type covering the syllabi of all the four units (I-IV). Five questions are to be attempted. Each question will carry two marks.

Paper–A : DATA ACQUISITION SYSTEMS :

Objectives :

The objective of Data Acquisition Systems course is to familiarize the students with various kinds of Transducers, instrumentation amplifiers, data acquisition system. Understanding of Power conditioning equipment and Programmable Logic controllers.

UNIT-I

Transducers :

Classification, Electrical Transducer, Selecting a transducer, Resistive transducer, Inductive transducer, Capacitive transducer, Piezo-electric transducer, Photoelectric, Phototransistor and thermoelectric transducer.

UNIT-II

Signal Conditioning :

OP-AMP, Basic Instrumentation Amplifier and its application. Concept of Filtering.

UNIT-III

Data Acquisition Systems :

Objective, Block diagram and functioning of various blocks, types of DAS, Case study (possibly through field visit).

UNIT-IV

Power Conditioning Equipment :

Operation, Block diagram of CVT, UPS, SMPS and Inverter with their applications.

Programmable Logic Controllers :

Introduction, PLC operation, Architecture and applications, Relays Timers, Counters, Sequencers, Ladder diagram programming, Case Study.

References :

1.	Kalsi, H.S.	:	*Electronic Instrumentation.*
2.	Halfrick and Cooper .	:	*Modern Electronic Instrumentation and Measurement Techniques.*
3.	Gottlieb, I.M.	:	*Power Supplies etc.*

Paper-B : MICROCONTROLLERS AND APPLICATIONS

Objectives :

The objective of Microcontrollers and Applications course is to cover various aspects of 8051 hardware and instruction architecture, basic assembly language programming, and applications.

UNIT-I

Microcontroller 8051 Architecture :

Microcontrollers—Evolution and comparison with microprocessor.

Microcontroller 8051 Hardware-Oscillator and Clock, Registers, RAM, ROM, I/O ports; External Memory-Connecting, COUNTERS and TIMERS—Timer Counter Interrupts, Timing, Timer Modes of Operation, Counting.

Transmission Modes :

Serial Data Input/Output : Serial Data Interrupts, Data Transmission, Data Reception, Serial Data.

UNIT-II

Interrupts :

Timer Flag Interrupt, Serial Port Interrupt, External Interrupts, Reset, Interrupt Control, Interrupt Priority, Interrupt destination, Software Generated Interrupts.

Basic Assembly Language Programming :

Why assembly language, Flow Charts, Writing and Testing the Program, Programming 8051—lines of code, 8051 instruction set.

Addressing Modes :

Immediate, Register, Direct, Indirect, External data moves, Code memory—read only data moves; Opcodes—Push, Pop.

UNIT-III

Logical Operations :

Byte-level, Bit-level : Internal RAM, SFR, Boolean operations.

Arithmetic Operations :

Flags, Instructions Affecting, Flags, Incrementing and Decrementing.

Addition—Unsigned and signed, Unsigned, Signed, Multiple-Byte Signed Arithmetic.
Subtraction : Unsigned and signed, Unsigned, Signed; Multiplication and Division, Decimal Arithmetic.

UNIT-IV

Jump and Call Instructions :

JUMP and CALL program range, Relative, Short absolute, Long absolute; Jumps-Bit, Byte, Unconditional; Calls and Subroutines-subroutines, Calls & the stack, Calls and returns.

Applications of Microcontroller 8051 : 7-segment display, Traffic Lights.

References :

1. Ayala, A.J. : *Microcontroller 8051.*
2. Scott MacKenzie : *Microcontroller 8051.*
3. Stewart, J.W. : *Microcontroller 8051.*
4. Barnett, R.H. : *8051 Family of Microcontroller.*

PRACTICALS

Objective :

The objective of PRACTICALS course is to provide practical training to students using Microcontrollers, their interfacing with I/O devices and transducers, Use of PLC's for basic industrial applications. Make a project based on Microcontroller/PLC**.**

Note : Atleast 15 practicals as per availability of apparatus.

1. To interface a toggle switch and an LED with Microcontroller.
2. To generate 1kHz square wave at P 1.1 using timer.
3. To generate I kHz square wave at P 1.1 using timer and 10 kHz at P 1.7 using interrupts.
4. To transmit and receive a character using serial I/O.
5. To copy the contents of register R7 to external RAM location.
6. To interface 4 DIP switches and to drive 7-segment display.
7. To interface a loudspeaker to generate a tone of 440 Hz.
8. To interface a Hex/calculator keypad to microcontroller.

9. To interface a DAC and DAC to microcontroller.
10. To study various active and passive transducers (4 turns).
11. To design an LPF/HPF.
12. To design an LPF using OPAMP.
13. To study load/voltage regulation of a UPS.
14. To study load/voltage regulation of a CVT.
15. To realize AND, OR, NOT, NAND and NOR gates using PLCs.
16. To use single push button to switch ON/OFF of a motor using PLCs.
17. To use a single push button switch ON/OFF of a conveyor and switch off after 20s with PLCs.
18. To realize an astable multivibrator using PLCs.
19. To demonstrate traffic light control using PLCs.
20. To realize a control for an elevator.
21. To realize a paid car parking.
22. To realize the working of a bottling plant.

Proposed Projects (Using Microcontroller/PLCs) :

Note : Any one project for one student.

1. Intrusion Alarm System.
2. Furnace Temperature Controller.
3. Traffic Light Controller.
4. Washing Machine Controller.
5. Micro wave Oven Controller.
6. SMPS
7. CVT.
8. Inverter.
9. UPS.

BIO-CHEMISTRY

B. Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Scheme of Examination	*Duration*	*Marks + Internal assessment*
Theory Paper-A: Molecular Biology	3 hrs.	67 + 8
Theory Paper-B: Applied Biochemistry	3 hrs.	67 + 8
One Practical examination pertaining to the entire syllabus included in Theory Papers A & B	3 hrs.	45 + 5
	Total marks :	**200**

Paper-A: MOLECULAR BIOLOGY

Three periods per week **Marks : 75**

INSTRUCTIONS FOR PAPER SETTER AND STUDENTS :

1. Total No. of questions will be nine. Q.No. 1 will be of 15 marks while other questions will be of 13 marks each.
2. Q. No. 1 will be compulsory. It will consist of 10 short questions covering the entire syllabus.
3. Besides question Number 1, there will be 4 sections of 2 questions each.
4. All other questions may contain 2-3 parts.
5. Questions should be uniformly spread over the entire syllabus.
6. Students will be required to attempt 5 questions in all including Q. No. 1 and at least one question from each of the 4 sections.

Objectives :
Aspects of storage and expression of genetic information. Membrane structure and function.

SECTION-I

(Lectures: 10)

***DNA Organization*:** Structure of chromatin – Histones and Nucleosomes. Active and inactive chromatin. Compaction of Chromatin. Chromosomes, Structure of Genome in eukaryotes. Rearrangements in Genetic Material. Integration of Chromosomes with viruses. Transposition, Experimental proofs for DNA as genetic material.

SECTION-II

(Lectures: 14)

DNA Replication : Semiconservative replication-proof. Molecular events and enzymes involved in DNA replication. DNA repair mechanisms. Mutations.

RNA Synthesis : Initiation, elongation and termination during RNA synthesis. Transcription signals. Processing of RNA. Introns and Exons. Nucleases.

Genetic Code and Protein Biosynthesis : Characteristics of Genetic code, Deciphering of Genetic Code. Initiation, elongation and termination of protein chains. Post translational modifications in proteins. Inhibitors of protein biosynthesis.

SECTION-III

(Lectures : 14)

Regulation of Gene Expression : Temporal Responses, Lac operon-Jacob Monod Hypothesis. Eukaryotic Gene Expression.

Recombinant DNA Technology : Restriction endonucleases. Chimeric DNA. Gene Library, Basic Principles in Gene Cloning. Applications of Biotechnology.

SECTION-IV

(Lectures: 12)

Membranes **:** Structure and functions of biological membranes, various models of membrane structure. Transport of solutes across membranes, Sodium pump.

Elementary aspects of the Molecular Biology of cancer and introduction to stem cells.

Molecular basis of the Origin and Evolution of Life.

Books Suggested :

1. *Harper's Illustrated Biochemistry,* 27th Edition, 2006.
2. Biochemistry, 5th Ed., 2002., Berg, J. M. & L. Stryer, W.H. Freeman, San Francisco.
3. *Molecular Biology* by David Freifelder, 1987.
4. *Genes VIII,* by Benjamin Lewin, 2003.
5. *Molecular Cell Biology* by James Darnell, Harvey Lodish and Davit Baltimore, 5th Edition, 2003.

Paper-B : APPLIED BIOCHEMISTRY

Three periods per week **Marks: 75**

INSTRUCTIONS FOR PAPER SETTER AND STUDENTS :

1. Total No. of questions will be nine. Q.No. 1 will be of 15 marks while other questions will be of 13 marks each.
2. Q. No. 1 will be compulsory. It will consist of 10 short questions covering the entire syllabus.
3. Besides question Number 1, there will be 4 sections of 2 questions each.
4. All other questions may contain 2-3 parts.
5. Questions should be uniformly spread over the entire syllabus.
6. Students will be required to attempt 5 questions in all including Q. No. 1 and at least one question from each of the 4 sections.

Objectives :

General aspects of vitamins, hormones, nutrition, immunology, blood coagulation, muscle contraction and nerve impulse transmission.

SECTION-I

(Lectures : 14)

Nutritional functions of water soluble Vitamins: B_1, B_2, Niacin, Pantothenic acid, B_6, Biotin, Folic Acid, B_{12} and Vitamin C. The role of water soluble vitamins as co-enzymes.

General characteristics and classifications of hormones .

Mechanism of Blood coagulation. Blood buffers and role of the kidneys in Acid Base regulation, Role of liver in detoxification of endogenous and exogenous substances.

Structure of voluntary muscle and mechanism of muscle contraction. Mechanism of nerve impulse transmission.

SECTION-II

(Lectures : 12)

Essential nutrients. Protein energy malnutrition, starvation and obesity. Respiratory Quotient (R.Q.) of carbohydrates, proteins and lipids. Basic metabolic rates and factors influencing it. Specific dynamic action of foods.

Protein quality and Nitrogen balance studies. Role of essential amino acids and fatty acid in human diet. Role of dietary fibers in Nutrition. Requirement of minerals (Macro & Micro) and their major Physiological functions.

SECTION-III

(Lectures : 12)

Definition of immune system and antigens. Cells involved in immune response. T-cell and B-cells, Immunoglobulins, chemical structure of the Antibody molecule. Haptens and carrier molecules, cell mediated immune response. Complement system, activation and its role in defense.

Brief discussion of various immunological techniques; Precipitation reactions in gels Haemagglutination, Immuno-fluorescence, radio-immunoassay (RIA), enzyme liked immunoadsorbent assay (ELISA) and immunoblotting.

SECTION-IV

(Lectures : 12)

Biochemical Principles of Toxicology. Phase I reactions and Cytochrome P 450 enzyme systems. Phase II reactions and various conjugation systems. Effects of nutritional status and metabolic induction on xenobiotic toxicity; Importance of Physico –chemical.

Properties of toxic chemicals. Biochemical basis of organophosphate and carbamate pesticides toxicity.

Books Recommended

1. Berg, J. M., Lubert Stryer : *Bio-chemistry,* W.F. Freeman and Co., New York, Edition 5th, 2002.

2. *Harper's Illustrated Biochemistry* by R.K. Murray, P.A. Mayes, D.K. Granner and V.W. Rodwell, 27th Ed. 2006, Prentice Hall International Ltd. (U.K.).

3. *Essential Immunology* by Ivan M. Roitt, English Language Book Society (ELBS) 8th Ed.,1994.

4. *Biochemical Toxicology of Environmental Agents* by A. De Bruin, Elsevier Pub.

5. *Human Nutrition & Dietetics* by R. Passmore & M.A. Eastwood.

PRACTICALS

Marks : 50

One Practical of three hours per week.

1. Estimation of DNA by diphenylamine method.
2. Effect of temperature on the Viscosity of DNA using Oswald's viscometer.
3. Assays of SGPT and SGOT in serum.
4. Extraction of RNA from yeast and its estimation by Orcinol method.
5. Determination of total protein and A/G ratio in serum.
6. Separation of serum proteins using paper electrophoresis.
7. Estimation of creatinine in urine.
8. Estimation of haemoglobin in blood.
9. Separation of proteins by SDS-Polyacrylamide Gel Electrophoresis.
10. Identification of Sugars in fruit juice using paper chromatography.
11. Determination of nature of inhibition of alkaline phosphatase by cysteine.
12. Determination of proteins by dye binding assay.

MICROBIOLOGY

B. Sc. (GENERAL) THIRD YEAR EXAMINATION, 2011

Scheme of Examination			*Duration*	*Marks*
Theory MIC-301	:	Pathogenic Microbiology	3 hrs.	75 (67 + 8)
Theory MIC-302	:	Food & Industrial Microbiology	3 hrs.	75 (67 + 8)
One practical pertaining to the entire syllabus included in theory papers A & B.			6 hrs.	50 (45 + 5)
			Total :	**200 marks**

Outlines of Tests and Syllabi

MIC-301 : PATHOGENIC MICROBIOLOGY

Max. Marks	:	75
Theory	:	67 marks
Internal Assessment	:	8 marks
Time	:	3 Hours

(Three periods per week)

Note : The question paper will consist of nine questions in total. The first question with sub-parts representing the entire syllabus will be compulsory. There will be no choice in the compulsory question. Apart from the compulsory question, students will attempt four other questions, one each from sections A, B, C and D. Each of the sections A, B, C and D will consist of two questions. All questions will carry equal marks.

SECTION-A

Introduction to important diseases caused by ***Streptococcus, Pneumococcus, Neisseria, Corynebacterium, Bacillus, Ciostridium, enterobacteriaceae (Proteus, Shigella, Salmonella), Vibrio, Yersinia, Hemophilus, Mycobacterium,*** The operative pathogenic mechanisms, laboratory diagnosis, prevention and control of these diseases.

SECTION-B

Morphology, pathogenesis, life cycle, laboratory diagnosis, prevention and control of viral diseases viz. Rabies, Polio, Small pox, Herpes, Measles, Influenza and AIDS.

SECTION-C

Introduction to Human mycotic infections viz Cryptococcosis, Dermatophytosis, Blastomycosis, Opportunisitc Mycosis; Candidiasis and Aspergillosis.

SECTION-D

Life cycle, pathogenic, mechanisms and control of parasitic infections viz. amoebiasis, Kala-azar, toxoplasmosis, ascariasis, filarasis, hook worm infections.

Reference Books :

1. Ananthanarayan, R. Panikar, C.K.J. (2002), *Textbook of Microbiology,* Orient Longman Ltd., 160, Anna Salai, Chennai.

2. Brooks, G.F, Butel J.S, Morse, S.A (2002), *Jawetz, Malnick and Adelberg's Medical Microbiology* Mc Graw Hill.

3. Tortora, G.J., Funke, B.R., Case, C.L (2009), *Microbiology: An Introduction,* Benjamin/Cummings Publishing Company Inc.

MIC-302 : FOOD & INDUSTRIAL MICROBIOLOGY

Note : The question paper will consist of nine questions in total. The first question with sub-parts representing the entire syllabus will be compulsory. There will be no choice in the compulsory question. Apart from the compulsory question, students will attempt four other questions, one each from Sections A, B, C and D. Each of the sections A, B, C and D will consist of two questions. All questions will carry equal marks.

SECTION-A

Food as a substrate for microorganisms, Nutritive value of food stuffs, effect of Hydrogen ion concentration (pH), moisture requirement on food, Important food borne diseases viz. Staphyococcal intoxication, Botulism. Salmonellosis, Shigillosis, Qualitative and Quantitative analysis of food components (proteins, fats, lipids, carbohydrates), Microbiological examination of food products including dairy products, food poisoning caused by bacteria and fungi.

SECTION-B

Contamination, preservation and spoilage in various foods viz. cereals & cereal products (cereal grains, flour, bread, pasta, macroni), sugars & sugars products (Maple, Syrup, Honey, Candy), Vegetables & Fruits, Meat (Fresh meat, fresh beef, hamburger, fish), Milk and Milk products (cheese, butter).

SECTION-C

Production strains Isolation & screening techniques, preservation and genetic modification of Industrial Microorganisms, Fermentation Media, characteristics of ideal production media, common substrateds used in ideal fermentations, Batch and continuous fermentations.

SECTION-D

Yeasts (Baker's) and its uses, fermentation of Beer, Wine and Alcohol, Production of organic acids viz. acetic acid, lactic acid, propionic and butyric acid and mixed acids. Mass transfer in aerobic fermentation.

Reference Books :

1. Frazier, W.C., Westhoff, D.C. (1988), *Food Microbiology,* Mc Graw Hill.

2. Jay, J.M., Loessher, M.J., Golden, D.A. (2005), *Modern Food Microbiology* (Edition 7), Illustrated Publishers Springer.

3. Potter, N.N., Hotchkiss, J.H. (1997), *Food Science,* CBS Publishers.

4. Admas, M.R., Moss, M.O. (2005), *Food Microbiology,* Edition 3, Illustrated Publishers Royal Society of Chemistry.

5. Montville, T.J., Metthews, K.R. (2005), *Food Microbiology, An Introduction,* ASM Press Washington, D.C.

6. Prescott, S., Dunn, C.G. (1994), *Industrial Microbiology,* Mc Graw Hill, New York, CBS Publishers and Distributors.

7. Casida, (1995), *Industrial Microbiology,* N.Y., Wiley.

PRACTICALS

Max. Marks : 50
Theory : 45 marks
Internal Assessment : 5 marks

(One practical of 3 hrs. per week)

1. Identification of both gram positive and gram negative microorganisms on the basis of :
   (i) Morphology.
   (ii) Bio-chemical characteristics.
   (iii) Serological reactions.

2. Demonstration of pathogens (Viruses, fungi, parasites) in permanent mounted slides.

3. Demonstration of cysts/ovas of protozoa/Helminths.

4. Demonstration of Laboratory grown fungi on sabauraud's agar.
5. Germ tube test for *candida albicans.*
6. Demonstration of fungi through normal saline/KOH preparation.
7. Quantitative examination of microbial types in raw processed preserved food stuffs.
8. Direct microscopic determination of bacteria in raw, pasteurized milk and reductase test.
9. Various biochemical tests and their importance in Food Microbiology.

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