

**(DCS / DIT 311)**

**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

**(Examination at the end of Third Year Third Semester)**

**COMPUTER SCIENCE&IT**

**Paper – I : Operating Systems**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer Question No.1 is compulsory**

**(15)**

**Answer one question from each unit**

**(4×15 = 60)**

1) Write short notes on:

- a) What are file attributes?
- b) What is bad block?
- c) Define worm.
- d) Explain starvation.
- e) Explain limit register and relocation register.

**UNIT - I**

2) Describe multi-programmed Batched systems.

OR

3) Explain

- a) Process Scheduling
- b) Threads.

**UNIT-II**

4) Explain Multiple –Process scheduling with an example.

OR

5) What is process Synchronization? Explain classical problem of synchronization.

### UNIT - III

6) Explain the combined Approach to Deadlock Handling.

OR

7) What is Memory Management? Explain segmentation with Paging.

### UNIT -IV

8) What is Page Replacement ? Explain Page Replacement Algorithm.

OR

9) Explain

a) Direct structure protection

b) Allocation methods.



**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

**(Examination at the end of Third Year Third Semester)**

**COMPUTER SCIENCE&IT**

**Paper – II : Systems Software**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer Question No.1 is compulsory ( 15)**

**Answer one question from each unit (4×15 = 60)**

**1) Write short notes on:**

- a) Data Formats
- b) Processor
- c) Debugging
- d) Kernel
- e) Subsystem.

**UNIT - I**

**2) Draw a neat block diagram of design of Assembler- Pass1 & Pass2 and explain it.**

OR

**3) Explain one pass Macro Processor handling macro calls within macro definition.**

**UNIT - II**

**4) Explain the function of debugging systems with an example.**

OR

**5) a) Describe the data bases used in the design of a direct linking loader.**

**b) Explain about Text Editors.**

### UNIT - III

6) Give a brief overview of UNIX system.

OR

7) Explain Internal representation of files.

### UNIT - IV

8) What is system call? Discuss various system calls used for the file system.

OR

9) Explain

a) I/O Subsystem.

b) Inter process communication.



**(DCS / DIT 313)**

**B.Tech. DEGREE EXAMINATION, DECEMBER - 2015**

**(Examination at the end of Third Year Third Semester)**

**COMPUTER SCIENCE & IT**

**Paper - III : Operations Research**

**Time : 03 Hours**

**Maximum Marks : 75**

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**Answer Question No.1 is compulsory (15)**

**Answer One question from each unit (4×15=60)**

- 1) Write a short notes on:
- a) Initial Basic Feasible solution
  - b) Dual simple method
  - c) Infeasible solution
  - d) Critical path
  - e) Saddle point

**UNIT -I**

- 2) a) Explain Modeling in operations Research.
- b) Explain phases of OR study.

OR

- 3) Give a brief account on Linear programming and its applications.

**UNIT -II**

- 4) Briefly explain about Transportation and Assignment models.

OR

5) Explain

- a) How to solve the rectangular two person zero sum games.
- b) Solution of rectangular games in terms of mixed strategies.

**UNIT –III**

6) Describe briefly about Inventory control in detail.

OR

7) Explain about the recursive equation approach and Computational procedure in dynamic programming.

**UNIT –IV**

8) Explain Project Management by PERT/ CPM in detail.

OR

9) Explain Monte- Carlo simulation and Applications to Queuing Problems.



**(DCS / DIT 314)**

**B.Tech. DEGREE EXAMINATION, DEC. - 2015**

**(Examination at the end of Third Year Third Semester)**

**COMPUTER SCIENCE & IT**

**Paper - IV : Design & Analysis of Algorithms**

**Time : 03 Hours**

**Maximum Marks : 75**

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**Answer Question No.9 is compulsory**

**(15)**

**Answer One question from each unit**

**(4×15=60)**

**UNIT –I**

1) Explain the Greedy Method. knapsack problem.

OR

2) Describe single source shortest paths.

**UNIT –II**

3) What is binary search tree? Explain optimal Binary search trees?

OR

4) Explain all pairs shortest path problem.

**UNIT –III**

5) Explain traversal & search techniques? Briefly?

OR

6) What is back tracking? Explain Hamiltonian cycle.

**UNIT –IV**

7) Explain Branch and Bound methods? Briefly ?

OR

8) Discuss about NP hard and NP complete problems.

9) Write short notes on:

- a) Job sequencing.
- b) Dynamic Programming.
- c) Reliability design.
- d) DFS.
- e) Knapsack problem.





**Answer Question No. 1 compulsory.**

**(15)**

**Answer any ONE question from each unit.**

**(4 × 15 = 60)**

**1)** Explain the following terms:

- a) DATABASE.
- b) E-R Model.
- c) EER Model.
- d) Concurrency.
- e) Normalization.

**UNIT - I**

**2)** Define a database. Explain about different types of database users.

OR

**3)** Explain about databases and different database users.

**UNIT - II**

**4)** What is relational data model and explain in detail about Relational Constraints.

OR

**5)** How do you map ER and EER to relational Mappings?

### UNIT - III

6) What is normalization and explain the normalization technique in detail.

OR

7) Explain the database system architecture using a simple example and diagram.

### UNIT – IV

8) What is transaction and explain about transaction processing concepts.

OR

9) Discuss in detail about various concurrency control techniques.



B. Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Third Year Fourth Semester)

COMPUTER SCIENCE & IT

Paper – I : Automata Theory & Formal Languages

Time : 3 Hours

Maximum Marks: 75

Answer question No.1 is compulsory

(15)

Answer one question from each unit

(4×15=60)

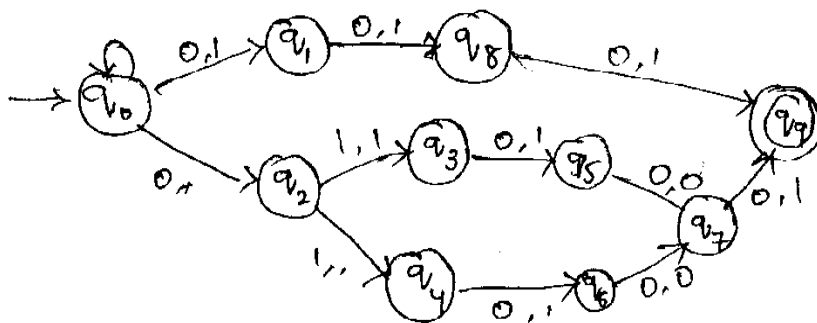
- 1) Write a short notes.
- a) MYHIL-NERODE theorem.
  - b) Derivation Trees.
  - c) Context free grammar.
  - d) Turing Machine.
  - e) Undecidability.

UNIT-I

- 2) Explain Non-Deterministic Finite Automata and Finite Automata with E-Moves.

OR

- 3) Convert the following NFA into on equivalent DFA.



## UNIT-II

- 4) a) Explain closure properties of Regular language.
- b) Write context free grammar for the regular expression  $0^*1(0+1)^*+1^*(0^*)^*$ .

OR

- 5) Explain Design algorithms for regular sets in detail.

## UNIT-III

- 6) a) Obtain the following grammar in Chomsky Normal form.

$$E \rightarrow E+T/T, T \rightarrow T *F/F, F \rightarrow (E)/I$$

$$I \rightarrow a|b|c|Ia|Ib|Ic.$$

- b) Explain about context free languages.

OR

- 7) Explain pushdown Automata context free languages in detail.

## UNIT-IV

- 8) Explain Turing machines in detail.

OR

- 9) Explain the properties of Recursive and Recursively Enumerable Languages.



**(DCS 322)**

**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

**(Examination at the end of Third Year Fourth Semester)**

**COMPUTER SCIENCE & IT**

**Paper - II : Principles of Programming Languages**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer ONE question from each unit**

**(15)**

**Answer Question No. 1 is Compulsory**

**(4 × 15 = 60)**

**1) Write short notes on:**

- a) Exceptions.
- b) Semaphores.
- c) Encapsulation.
- d) Mixed mode assignment.
- e) Pointers.

**UNIT – I**

**2) Explain different program environments and Design Trade offs of different programming languages.**

**OR**

**3) Discuss the concepts of Binding and Type checking.**

**UNIT - II**

**4) What is the scope and life of time of a programming language. Explain it briefly.**

**OR**

**5) Discuss in detail about compound, selection. Iterative and Unconditional Branching Statements.**

### UNIT - III

6) Explain in detail about the concept of Parameter Parsing in Fortran 77 language.

OR

7) Discuss about Data Abstraction and parameterized Abstract Data Types.

### UNIT - IV

8) How do you support various concepts in OOP in C++ and ADA 95.

OR

9) Write a detailed notes on Exception handling concept.



**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

**(Examination at the end of Third Year)**

**COMPUTER SCIENCE**

**Paper - III : Software Engineering**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer Question No.1 is compulsory**

**(15)**

**Answer ONE question from each unit**

**(4×15 = 60)**

**1) Discuss the following:**

- a) Test case design.
- b) Testing patterns.
- c) Design evaluation.
- d) Validating requirements.
- e) Developing use cases.

**UNIT - I**

**2) Explain about the software life cycle model with various phases.**

**OR**

**3) Explain about databases and different database users.**

**UNIT - II**

**4) Explain requirement engineering process in detail.**

**OR**

**5) What is data modelling? Draw ER Diagram and identify data objects with attributes used in employee information.**

### **UNIT - III**

6) How you do some effective modular design. List out the design heuristics.

OR

7) Explain the design steps of transform mapping.

### **UNIT - IV**

8) What are the tasks in SCM process? Explain each of them in detail.

OR

9) Discuss in detail about different integration testing approaches.





**(DCS 324)**

**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

**(Examination at the end of Third Year)**

**COMPUTER SCIENCE**

**Paper - IV : Data Communications**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer Question No.1 is compulsory**

**(15)**

**Answer ONE question from each unit**

**(4×15 = 60)**

- 1) Discuss the following:
- a) Digital communication.
  - b) Transmission media.
  - c) Data communication.
  - d) Topology.
  - e) Bit rate & baud rate.

**UNIT - I**

- 2) What is data communication? What are the possible ways of data transmission? Explain with examples.

OR

- 3) Draw the block diagram of data communication system and explain its components.

**UNIT - II**

- 4) Give the classifications of transmission line? Explain briefly.

OR

- 5) What is an optical fibre mode? Explain the three practical types of optical fiber modes.

### UNIT - III

- 6) What is a transmission line? Compare balanced and unbalanced transmission lines? What are the different types of metallic transmission line types?

OR

- 7) Give the advantages and disadvantages of optical fibers compared to metallic cables.

### UNIT - IV

- 8) Discuss various generations of the wireless networks? Explain development of each generation clearly.

OR

- 9) Draw the block diagrams of microwave transmitter and receiver and explain their functioning.



**(DCS 325)**

**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

**(Examination at the end of Third Year Fourth Semester)**

**COMPUTER SCIENCE & IT**

**Paper - V : Computer Graphics**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer Question No.1 is compulsory**

**(15)**

**Answer ONE question from each unit**

**(4×15 = 60)**

**1) Write a short notes on:**

- a) Homogeneous co-ordinate system.
- b) File interpreter.
- c) Thickline segments.
- d) Visibility.
- e) Matrices.

**UNIT - I**

**2) Explain Bresenham's Algorithm with an example.**

**OR**

**3) Explain briefly about:**

- a) File interpreter
- b) Graphics primitives

**UNIT - II**

**4) Explain the working of a CRT and storage tube display.**

**OR**

**5) Explain simple DDA with an example.**

### UNIT - III

- 6) Explain in detail about
- a) Inside test.
  - b) Filling polygons

OR

- 7) Explain briefly about segment closing, creation and deleting with an example.

### UNIT - IV

- 8) Explain rotation about an arbitrary point.

OR

- 9) Discuss about hodgman algorithm with an example



**B.Tech. DEGREE EXAMINATION, DECEMBER – 2015**

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**COMPUTER SCIENCE & IT**

**Paper - VI : Internet Programming**

**Time : 3 Hours**

**Maximum Marks: 75**

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**Answer Question No.1 is compulsory**

**(15)**

**Answer ONE question from each unit**

**(4×15 = 60)**

**1) Write a short notes on:**

- a) Packages & Interfaces.
- b) AWT.
- c) Swing.
- d) Network.
- e) Bean Box.

**UNIT - I**

**2) What is meant by Polymorphism? Explain it. Write a java program.**

**OR**

**3) What are the benefits of exception handling? Discuss the usage of throws and 'finally' keywords.**

**UNIT - II**

**4) What are layout managers in java? Explain them with examples.**

**OR**

**5) Write a java program that the parameter passing takes place through applets.**

### UNIT - III

6) List and describe the classes provided by java x. Servlet.http package.

OR

7) Explain JDBC with a java program.

### UNIT - IV

8) Explain about:

a) RMI.

b) Networking.

OR

9) Write a java program on java Beans.

