

[LG 149]

APRIL 2015

Sub. Code: 2044

M.D. DEGREE EXAMINATION

BRANCH XIII – BIOCHEMISTRY

PAPER II – CELL PHYSIOLOGY, MOLECULAR BIOLOGY
AND HUMAN GENETICS

Q.P. Code: 202044

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essay:

(2 x 10 = 20)

1. Describe in detail the types and procedure of gene therapy. Add a note on the advantages and disadvantages of different vectors used.
2. Describe in detail the process of protein synthesis in eukaryotes. Add a note on antibiotics inhibiting the protein synthesis.

II. Short Questions:

(8 x 5 = 40)

1. Telomere, its role in a cell and its clinical significance.
2. Proto-oncogenes and mechanism of their activation.
3. Class switching.
4. What is Post-Translational modification? Explain with suitable examples.
5. Lysosomes – functions & disorders associated with abnormalities of its functions.
6. *P53* gene and its role in tumorigenesis.
7. RNA interference.
8. GLUT.

III. Reasoning Out:

(4 x 5 = 20)

1. What is the rationale behind the use of salt-sugar solutions (ORS) in the treatment of acute diarrhoeal disorders?
2. Mutation in RB1 gene causes retinoblastoma. Explain.
3. Why S-9 fragment of liver homogenate is added in Ames Assay?
4. Not all mutations result in diseases. Why?

IV. Very Short Answers:

(10 x 2 = 20)

1. Give an example of a Ribozyme and its role in a cell.
2. Histones – types and functions.
3. Goldberg – Hogness Box.
4. Role of golgi apparatus in a cell.
5. Types and function of RNA polymerases.
6. Prion disease.
7. cDNA – synthesis and utility.
8. What is Frameshift Mutation? Give an example?
9. Any 2 differences between mt DNA and nuclear DNA.
10. Alu family.
