

[LS 149]

NOVEMBER 2020
(OCTOBER 2020 SESSION)

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

I. Essay Questions:

(2 x 15 = 30)

1. Describe the process of synthesis and replication of DNA. Mention about the methods of amplification of DNA.
2. Discuss the steps in the synthesis of protein. Add a note on post –translational modifications and its disorders.

II. Short notes:

(10 x 5 = 50)

1. Subcellular fractionation and identification
2. Mitochondrial and plasmid DNA
3. Genetic code
4. Customised drug designing
5. Explain the following terms and their applications
 - i. Proteomics
 - ii. Pharmacogenomics
 - iii. Microarrays
 - iv. Transcriptomics
 - v. Metabolomics
6. Restriction fragment length polymorphisms and their applications
7. Reverse transcriptase PCR (RT-PCR)
8. Types and functions of DNA
9. Adhesion molecules and their applications
10. Major Histocompatibility Complex

III. Reasoning Out:

(4 x 5 = 20)

1. Microsatellite instability disorders present with anticipation. Why?
2. Centromere is an essential structure for chromosomal segregation during mitosis
3. Reversible deformability of erythrocytes
4. All mutations do not cause disease.
