

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID :199204

Roll No.

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B.Tech.**(SEM. II) THEORY EXAMINATION 2013-14****INTRODUCTION TO BIO SCIENCE***Time : 3 Hours**Total Marks : 80*

Note :—Attempt questions from each Section as per the given instructions.

SECTION—A

1. Attempt all parts of this question : (2×8=16)
- (a) List the main points of the Cell Theory.
 - (b) What is a Cytochrome ?
 - (c) Write brief note on the Nucleosome Model of DNA Packaging.
 - (d) What is RNA Splicing ?
 - (e) Define the process of Cloning.
 - (f) Write the underlying principle of Electrophoresis.
 - (g) Specify the role of the Restriction enzymes.
 - (h) Write in brief about the process of Lactation.

SECTION—B

2. Attempt any **three** parts of this question : (8×3=24)

- (a) (i) What is Kreb's Cycle ? Describe the steps involved in Kreb's Cycle.
- (ii) Define Polymorphism. Explain the structure, types and functions of Lysosome.
- (b) Enumerate the points of difference between DNA and RNA.
- (c) What is Cell Cycle ? Describe the various stages of Cell Cycle.
- (d) Describe the various steps involved in the process of gene Cloning.
- (e) Define Fertilization. Explain the stages of Pregnancy and Embryonic Development (Human).

SECTION—C

Note :—Attempt any **one** part of this question : (8×5=40)

- 3. (a) Describe with suitable diagram the fluid mosaic structure of Plasma Membrane and list its functions.
- (b) Describe the various steps involved in the EMP pathway.

4. (a) Explain with the help of suitable diagrams the process of DNA replication.
(b) What is Transcription ? Describe with suitable diagrams the formation of m-RNA from DNA template.
5. (a) Write in detail about asexual and sexual methods of Reproduction.
(b) With the help of labeled diagrams explain the process of mitosis in an animal cell.
6. (a) What is Genome ? Describe the Human Genome Project and write about the salient features of human genome.
(b) What are Stem Cells ? Give the characteristics of the Embryonic and Adult Stem Cells.
7. (a) Give the different phases of a menstrual cycle and explain the various changes that occur in each phase.
(b) What is Contraception ? Discuss the different methods of birth control.