

(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 Krebs's Cycle ? Describe the steps involved in Krebs'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.