

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

PAPER ID : 1155

Roll No.

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**B.Tech.**

(SEM. I) ODD SEMESTER THEORY  
EXAMINATION 2013-14

**INTRODUCTION TO BIO-SCIENCES**

Time : 3 Hours

Total Marks : 80

Note :- Attempt questions from each Section as per instructions.

**SECTION-A**

1. Attempt all parts of this question : (2×8=16)
- (a) Which organelle is produced by Golgi-apparatus ? Write its main functions.
  - (b) In Eukaryotic cells, how many ATP's are produced in glycolysis, Krebs's cycle and Electron Transport chain, in Aerobic Cellular Respiration ?
  - (c) What will happen if an animal cell is placed in a hypertonic solution ?
  - (d) What is "Chargraff's Rule" ?
  - (e) What factors stabilize the DNA double helix ?
  - (f) Why Mitosis is important ?
  - (g) What are the advantages of "Genetic Engineering" ?
  - (h) Write down the main functions of testes and prostate gland.

### SECTION-B

2. Attempt any three of the following : (8×3=24)

- (a) (i) Discuss about Citric Acid Cycle.  
(ii) What is "Fluid Mosaic Model" of membranes ? Explain with labelled diagram.
- (b) (i) Explain the process of Transcription.  
(ii) Explain "Watson and Crick" Model of DNA.
- (c) What are the main phases of "cell-cycle" ? Mention about main "check points". Why are check points important ?
- (d) (i) What are "Genetically Modified Foods" ? How they are important ? Give examples.  
(ii) What is "Polymerase Chain Reaction" ? Explain the technique.
- (e) What is "Weeping of Uterus for the lost ovum" ? Explain in detail.

### SECTION-C

Note:- Attempt all questions of this Section : (8×5=40)

3. Give the Biochemical Pathway of Glycolysis.

OR

Draw a well labelled diagram of an animal cell. Discuss the structure and functions of Golgi bodies.

4. Explain the process of DNA Replication.

OR

Explain the process of Transcription.

5. What are the different methods of Reproduction ? Explain with examples.

OR

How does Cell Reproduce ? Briefly explain the different stages of M-phase of the cell cycle.

6. What are "stem cells" ? Explain different types with suitable examples.

OR

Discuss in detail about "Human Genome Project" (HGP).

7. Describe different methods of conception control.

OR

Write short notes on :

- (i) Oogenesis  
(ii) IVF.