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

PAPER ID : 1109 Roll No. 

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**B. Tech.**

**(Semester-I) Theory Examination, 2012-13**

**INTRODUCTION TO BIOSCIENCES**

Time : 3 Hours]

[Total Marks : 80

Note : Attempt questions from each Section as per instructions.

**Section-A**

Attempt *all* parts of this question. Each part carries 2 marks. 2×8=16

1. (a) Mention the significant role of Suicide cells.
- (b) Write brief note on the functions of Electron Transport Chain.
- (c) Draw the double helix structure of DNA.
- (d) Write any two functions DNA.
- (e) Specify the circumstances in which mitosis occurs.

6. Attempt any one part of the following : 8×1=8

- (a) Explain in detail about the principles and procedure of PCR.
- (b) Elaborate the various steps of molecular cloning and mention some of the applications of Human Genome Project.

7. Attempt any two parts of the following : 4×2=8

- (a) Enlist the different phases of menstrual cycle and explain them.
- (b) Discuss about the process of embryogenesis.
- (c) Explain in brief about the surgical methods of fertility control.



(f) Give the significances of preparatory phase of cell cycle.

(g) What are the disadvantages of gene therapy?

(h) Mention the properties of adult stem cells.

### Section-B

Attempt any *three* parts of this question. Each part carries 8 marks.  $8 \times 3 = 24$

2. (a) (i) With a neat sketch explain the structure of Golgi body.

(ii) Sketch the overview of Citric Acid cycle.

(b) Explain in detail about Transcription and Translation which involves in the process of protein synthesis.

(c) Elaborate the first three phases of cell cycle that takes place in Eukaryotic cell division.

(d) With an application explain the process of genetic fingerprinting.

(e) Write short note on reproductive health and the strategies of birth control.

### Section-C

Attempt *all* questions of this Section. Each question carries 8 marks.  $8 \times 5 = 40$

3. Attempt any two parts of the following :  $4 \times 2 = 8$

(a) Draw the diagram which shows the overall reaction involved in the conversion of glucose to pyruvate.

(b) Describe the various functions of biological membrane that separates the interior of all cells from the outside environment.

(c) Elucidate about structure of microbodies with neat sketch.

4. Attempt any one part of the following :  $8 \times 1 = 8$

(a) Discuss about genetic recombination and genetic code.

(b) With necessary diagrams give a short note on the structure and functions of RNA.

5. Attempt any one part of the following :  $8 \times 1 = 8$

(a) Briefly explain the different stages of M phase of the cell cycle.

(b) Write short note on the cell reproduction process.