

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

PAPER ID : 2787

Roll No.

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B. Tech.

(SEM. VII) THEORY EXAMINATION 2011-12

INTRODUCTION TO BIOTECHNOLOGY

Time : 3 Hours

Total Marks : 100

Note :- (i) Attempt **all** questions.

(ii) All questions carry equal marks.

1. Attempt any **four** of the following : **(5×4=20)**

- Give a short description on Bioethics.
- Describe the properties of various nucleotides.
- What are viruses ? Differentiate between viruses and viroids.
- Different types of protein structure with suitable examples.
- Explain role of nucleus in living cell.

2. Attempt any **two** of the following : **(10×2=20)**

- Write short notes on the following :
 - Mitochondria
 - Endoplasmic Reticulum.

(b) What is cell cycle ? Differentiate between a meiotic and mitotic cell.

(c) What is cell membrane ? Write composition and function of cell membrane.

3. Attempt any **four** of the following : **(5×4=20)**

(a) Discuss structural and functional features of Prokaryotic and Eukaryotic cell.

(b) What are mutations ? Write short note on frameshift mutation.

(c) What are housekeeping genes ?

(d) Define principle of segregation.

(e) Write short notes on the following :

(i) Starter culture

(ii) Biofertilizer.

4. Attempt any **two** of the following : **(10×2=20)**

(a) What is biotechnology ? Discuss its application in various areas of human significance.

(b) What do you understand by recombinant DNA technology ? Discuss the various uses of this technique in biotechnology.

(c) Write detailed note on molecular probes. Discuss their uses in biotechnology research.

5. Attempt any **two** of the following : (10×2=20)

(a) Describe various uses of enzymes in food industry.

(b) Write short notes on the following :

(i) DNA fingerprinting

(ii) Monoclonal antibodies.

(c) Discuss the aerobic method of waste treatment. How it is different from anaerobic waste treatment ?