



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

**PAPER ID : 154317**

Roll No.

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## B. Tech.

(SEM. III) (ODD SEM.) THEORY  
EXAMINATION, 2014-15

### MICROBIOLOGY AND CELL BIOLOGY

Time : 3 Hours]

[Total Marks : 100

**Note :** Attempt **all** questions.

1 Attempt any four parts of following :  $4 \times 5 = 20$

- Differentiate between Gram -ve and Gram +ve cell wall.
- What are the constituents of basic nutrient media? Also give one function each.
- Discuss photophosphorylation.
- Differentiate between benign and malignant tumor.
- Draw the diagram showing 8-kingdom classification.

2 Attempt any four parts of following :  $4 \times 5 = 20$

- (a) Write the functions of mesosomes and cytoplasm.
- (b) Explain the oncogenic hypothesis and somatic mutation theory of cancer.
- (c) Give the methods for the classification of bacteria. What are the various methods used for the identification of culture?
- (d) Give an illustrated account of structure and function of cell membrane.
- (e) Define microbial growth. How will you measure growth by turbidity measurement?

5 Attempt any two parts of following :  $2 \times 10 = 20$

- (a) What do you understand by waste water treatment? Describe the three types of treatment procedures of waste water.
- (b) Explain the process of protein localization to its target site. Discuss the role and importance of signal peptide and SRP.
- (c) Write in detail about the mechanism of nitrogen fixation.

3 Attempt any two parts of following :  $2 \times 10 = 20$

- (a) What is batch and continuous cultures? Discuss the advantages and disadvantages of these culture techniques.
- (b) Explain the genetic changes and cell inclusions differences between a normal cell and a cancerous cell.
- (c) What is strain improvement? Explain the various methods for strain improvement.

4 Attempt any two parts of following :  $2 \times 10 = 20$

- (a) Explain bacterial photosynthetic electron transport system in detail.
- (b) What is tuberculosis? Discuss in brief about the causal organism and control measures.
- (c) What is bioremediation? Explain ex-situ and in-situ bioremediation in detail.