

Seat No. : \_\_\_\_\_

# AC-112

April-2019

B.Sc., Sem.-II

## 103 : Biotechnology (Biology of the Cell)

Time : 2:30 Hours]

[Max. Marks : 70

1. (A) Discuss chemistry and ultrastructure of cytoplasmic membrane with diagram. 14

**OR**

(1) Describe structure of chloroplast with diagram. 7

(2) Discuss structural diversities within Prokaryotic cell. 7

- (B) Answer in brief : (Any **four**) 4

(1) Differentiate between functions of Cilia and Flagella.

(2) List functions of Endoplasmic Reticulum.

(3) Define Zooplanktons.

(4) What is chemical nature of Cytosol ?

(5) Differentiate between Bacteria and Archea.

(6) Give the function of Cell wall in bacteria.

2. (A) Describe Active and Passive transport mechanisms for nutrient uptake. 14

**OR**

(1) Discuss organization of the Electron Transport Chain. 7

(2) Explain ATP generation involving Electron Transport Chain. 7

- (B) Answer in **one** or **two** lines only : (Any **four**) 4

(1) Give co-enzymes involved in ETC.

(2) What are Chemolithotrophs ?

(3) Define Fermentation.

(4) Differentiate between Catabolism and Anabolism.

(5) Name two Photoautotrophs.

(6) Define Antiport.

3. (A) Write detailed note explaining Growth and Tumor. 14
- OR**
- (1) Explain cell division process by meiosis with diagram. 7
- (2) Define cell cycle and briefly explain the stages of cell cycle. 7
- (B) Answer in brief : (Any **three**) 3
- (1) Draw labelled diagram of cell cycle.
- (2) Define cell.
- (3) Differentiate between Meiosis and Mitosis.
- (4) What is Apoptosis ?
- (5) What is role of Spindle fibres in cell division ?
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4. (A) Describe the Translation process in Prokaryotes with diagrams. 14
- OR**
- (1) Explain cell junction and its types. 7
- (2) Discuss the Operon model with suitable example and diagram. 7
- (B) Answer in brief : (any **three**) 3
- (1) Which codon serve as Start Codon ?
- (2) What are substrate and product for enzyme Reverse Transcriptase ?
- (3) Define Transcription.
- (4) What is feed-back control ?
- (5) Define Codon.
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