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 ?

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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