



MBC-003-001426

Seat No. _____

B. Sc. (Sem. IV) (CBCS) Examination

March / April - 2018

Biochemistry

Paper - 401 : Cell Biology And Plant Biochemistry

(Old Course)

Faculty Code : 003

Subject Code : 001426

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Select the correct answer for the questions from the given choices : **20**

- (1) What is the contribution of Robert Hook towards cell biology?
- (2) Name the marker enzyme of Lysozomes?
- (3) Give important function of Peroxyzomes.
- (4) Define cell theory.
- (5) What are Prions? Write at least one example of disease caused by Prions.
- (6) List different phases of cell cycle.
- (7) Define homologous chromosomes. How many pairs of homologous chromosomes are present in human cells?
- (8) Write significance of spindle fibers.
- (9) Describe amphipathic nature of phospholipids
- (10) Write examples of compounds transported across the membrane by simple diffusion.
- (11) Differentiate between peripheral and integral membrane proteins.
- (12) Why primary active transport is also known as ATP driven transport?
- (13) Name the plant hormone promotes fruit ripening.
- (14) Which plant hormone is involved in falling of mature yellow colored leaves of plants?

- (15) Name the most abundant protein in plants.
- (16) Name the plant pigments that plays vital role in photosynthesis in plants.
- (17) What is transgenic plant? Give one example of transgenic plant.
- (18) Write one example of C₄ plant?
- (19) Describe acclimatization in plants.
- (20) Define callus.

- 2** (A) Answer any **three** of the following questions : **6**
- (1) Write the functions of microtubules
 - (2) Write the basic structural difference between C₃ and C₄ plants?
 - (3) Write the importance of mitosis in human beings.
 - (4) Describe the functions of cholesterol in the plasma membrane.
 - (5) What is the importance of CAM plants?
 - (6) Define Hybrid seeds, how they can be produced?
- (B) Answer any **three** of the following questions : **9**
- (1) Why E. coli is one of the most extensively studied prokaryote?
 - (2) Why viruses are not classified as true cells?
 - (3) Write differences between simple and facilitated diffusion
 - (4) Write the biological importance of meiosis.
 - (5) Write a note on sodium potassium ATPase
 - (6) Explain the role of auxins in plants.
- (C) Answer any **two** of the following questions : **10**
- (1) Explain process of mitosis along with its physiological significance.
 - (2) Describe the Fluid mosaic model of plasma membrane with proper diagram.
 - (3) Write a short note on Isolation and purification of cell organelles.
 - (4) Explain plant hormone auxin in detail.
 - (5) Differentiate between symbiotic and non-symbiotic nitrogen fixation

- 3 (A) Answer any **three** of the following questions : **6**
- (1) Describe the structural and functional diversity in eukaryotic cells by giving suitable examples.
 - (2) Write the differences between active and passive transport.
 - (3) Give functions of plant hormone gibberellins.
 - (4) Write the significance of chromosomal crossing over
 - (5) Which plant hormones help in differentiation of callus into root and shoots?
 - (6) Explain nitrogen cycle with suitable diagram.
- (B) Answer Any **three** of the following questions : **9**
- (1) Write a note on structure and functions of mitochondria
 - (2) Write a brief note on cell cycle and its various stages.
 - (3) Explain Sodium potassium ATPase and its functions.
 - (4) What is membrane asymmetry? List the factors that contribute to membrane asymmetry.
 - (5) Give advantages of Micropropagation.
 - (6) Explain fluorescence and phosphorescence in plants.
- (C) Answer any **two** of the following questions : **10**
- (1) Write a brief note control or regulation of cell cycle
 - (2) Write short note on FRAP experiment and its importance
 - (3) List the differences between mitosis and meiosis
 - (4) What is BT cotton?
 - (5) Explain photorespiration in plants.
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