



MBL-003-10120022

Seat No. _____

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

March / April - 2018

BC-201 : Cell Biology & Plant Biochemistry

Faculty Code : 003

Subject Code : 10120022

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

[Total Marks : 70

Instruction : Figures in the right indicate marks.

- 1 (a) Objective Type Questions : 4
- (1) Prokaryotes lacks nucleus. True/False
 - (2) The term "Mitochondria" was first coined by _____
 - (3) The main substance that makes up cell walls in plant is _____
 - (4) The principle molecule composing most of plasma membrane is _____
- (b) Answer in brief : (any 1 out of 2) 2
- (1) Draw well labelled diagram of animal cell.
 - (2) What are viroids?
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Difference between animal cell and plant cell.
 - (2) Explain structure and functions of cytoskeleton.
- (d) Write short note : (any 1 out of 2) 5
- (1) Write in detail note on structural organization of prokaryotes.
 - (2) Short note on plant cell wall.

- 2** (a) Objective Type Questions. **4**
- (1) The cell structure that is the site of ATP synthesis is _____
 - (2) The cell structure that stores calcium ion is _____
 - (3) Which molecule adds stability to the bilayer plasma membrane?
 - (4) The membrane present around vacuoles is called _____
- (b) Answer in brief : (any 1 out of 2) **2**
- (1) Why mitochondria known as a power house of cell?
 - (2) What are the functions of peroxysomes?
- (c) Answer in detail : (any 1 out of 2) **3**
- (1) Write about functions of Golgi body.
 - (2) Draw well labelled diagram of chloroplast and its functions.
- (d) Write short note : (any 1 out of 2) **5**
- (1) Write a detail note on ultra structure of nucleus.
 - (2) Discuss functions of enzymes present in lysosomes.
- 3** (a) Objective Type Question : **4**
- (1) Chromosomes can be counted best at the stage of _____
 - (2) During mitosis, homologous chromosomes pair up and separate. True/False
 - (3) The spindle forms in _____ phase.
 - (4) During mitosis ER and nucleus began to disappear at _____ phase.
- (b) Answer in brief : (any 1 out of 2) **2**
- (1) How cell divisions occurs in cycle.
 - (2) Define Chiasmata formation.

- (c) Answer in detail : (any 1 out of 2) 3
- (1) Explain, significance of Mitosis.
 - (2) Write in detail about cell cycle.
- (d) Write short note : (any 1 out of 2) 5
- (1) Write in detail about steps of meiosis.
 - (2) Give the difference between mitosis and meiosis.
- 4 (a) Objective type question : 4
- (1) _____ has proposed fluid mosaic model.
 - (2) Sphingolipids derived from _____
 - (3) Define diffusion.
 - (4) Full form of FRAP.
- (b) Answer in brief : (any 1 out of 2) 2
- (1) What is cell membrane? What is it made up of?
 - (2) Enlist the factors that affect the fluidity of membrane?
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Explain in detail active transport mechanism.
 - (2) How glucose transport occurs in epithelial cell of intestine.
- (d) Write short note : (any 1 out of 2) 5
- (1) Write about fluid mosaic model of plasma membrane.
 - (2) Explain various transportation across membrane..
- 5 (a) Objective Type Questions : 4
- (1) The visible product of photosynthesis is _____
 - (2) _____ is precursor for abscisic acid.
 - (3) The source of CO₂ during Calvin cycle in C₄ plant is _____
 - (4) During light phase of photosynthesis _____ is oxidised and _____ is reduced.

- (b) Answer in brief : (any 1 out of 2) **2**
- (1) What are the functions of RUBISCO?
 - (2) Define : Photorespiration with example
- (c) Answer in detail : (any 1 out of 2) **3**
- (1) Give the difference between C₃ and C₄ cycle.
 - (2) Discuss biological N₂ fixation.
- (d) Write short note : (any 1 out of 2) **5**
- (1) Explain plant hormones and their functions.
 - (2) Write a short note on CAM plants metabolism
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