



NBL-003-10120022 Seat No. _____

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

April / May - 2017

Biochemistry : Paper - 201

(Cell Biology & Plant Biochemistry)

Faculty Code : 003

Subject Code : 10120022

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

[Total Marks : 70

- 1 (a) Write the correct answer for the questions : **4**
- (1) Define: histology.
 - (2) What is the contribution of cell theory in the development of cell biology?
 - (3) What is cell?
 - (4) Write at least two examples of eukaryotic organisms.
- (b) Write the Answer in Brief : (any 1 out of 2) **2**
- (1) What do you understand by the term cell division and differentiation?
 - (2) Write briefly about Mycoplasma.
- (c) Write the Answer in detail : (any 1 out of 2) **3**
- (1) Write a note on E. coli : A well studied prokaryotic organism.
 - (2) Draw a well labelled diagram of a typical prokaryotic cell.
- (d) Write the Short note in detail : (any 1 out of 2) **5**
- (1) Explain the different levels of organization in cell biology.
 - (2) Write the differences between prokaryotic and eukaryotic cells.

- 2** (a) Write the correct answer for the questions : **4**
- (1) Write the role of nuclear pore.
 - (2) Define cell organelle with example.
 - (3) Write the examples of microtubule.
 - (4) Give the function of power house of cell.
- (b) Write the Answer in Brief : (any 1 out of 2) **2**
- (1) Write briefly about ribosome.
 - (2) Classify cytoskeleton.
- (c) Write the Answer in detail : (any 1 out of 2) **3**
- (1) Write the types of Endoplasmic reticulum and give functions of each.
 - (2) Write a note on marker enzymes and their significance.
- (d) Write the Short note in detail : (any 1 out of 2) **5**
- (1) Explain the structure and functions of Golgi body with diagram.
 - (2) Explain with diagram/ chart about differential centrifugation.
- 3** (a) Write the correct answer for the questions : **4**
- (1) Give full form of MPF.
 - (2) What do you understand by synapse?
 - (3) Give importance of interphase in cell cycle.
 - (4) Define homologous chromosome.
- (b) Write the Answer in Brief : (any 1 out of 2) **2**
- (1) Define cell cycle and draw the diagram.
 - (2) Write functions of cyclins.
- (c) Write the Answer in detail : (any 1 out of 2) **3**
- (1) Write the prophase-1 of meiosis.
 - (2) State the major difference between meiosis and mitosis.

- (d) Write the Short note in detail : (any 1 out of 2) **5**
- (1) Explain process of Mitosis in detail.
 - (2) Write an essay on different regulator molecules responsible in cell cycle checkpoint.
- 4 (a) Write the correct answer for the questions : **4**
- (1) If concentration of oxygen outside the cell increases by 10 fold, what would be its effect on transport of oxygen from outside to inside the cell?
 - (2) Write names of phospholipids that are acting as constituents of biological membranes.
 - (3) In what form carbohydrates are present in biological membranes?
 - (4) Why does the active transport across the membrane require energy?
- (b) Write the Answer in Brief : (any 1 out of 2) **2**
- (1) What makes the biological membranes fluid at normal physiological temperature?
 - (2) By what mechanism oxygen and carbon dioxide are transported across the biological membranes?
- (c) Write the Answer in detail : (any 1 out of 2) **3**
- (1) Write differences between simple diffusion and facilitated diffusion.
 - (2) Define and give examples of following terms: Symport, Antiport and Uniport.
- (d) Write the Short note in detail : (any 1 out of 2) **5**
- (1) Discuss FRAP experiment for studying the rate of lateral movement of molecules in biological membranes.
 - (2) Write a short note on primary active transport with suitable example.

- 5 (a) Write the correct answer for the questions : **4**
- (1) What is photorespiration?
 - (2) Name the pathways for electron transfer in photosynthesis.
 - (3) What is plant growth hormone?
 - (4) What is symbiosis? Give an example.
- (b) Write the Answer in Brief : (any 1 out of 2) **2**
- (1) Draw the diagram of Krenz anatomy.
 - (2) Give the different ways of non biological Nitrogen fixation.
- (c) Write the Answer in detail. (any 1 out of 2) **3**
- (1) Write note on plant growth regulators.
 - (2) Give note on photosynthetic apparatus with diagram.
- (d) Write the answer in detail. (any 1 out of 2) **5**
- (1) Give the brief idea about Calvin cycle.
 - (2) Explain in detail: Mechanism of nitrogen fixation.
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