

B.Sc.(Part-II) (CBCS Pattern) Semester - VI
USBCDST-15 - DSE-III - Biochemistry-III : Advanced Cell Biology

P. Pages : 2

Time : Three Hours



GUG/S/23/13339

Max. Marks : 50

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- Notes : 1. All the questions are compulsory and carry equal marks.
2. Draw well labelled diagrams wherever necessary.

1. Describe in detail the transport and regulation of nuclear protein import and export. **10**

OR

- a) Write a note on composition of cell membrane. **2½**
- b) Write a note on the structure and functions of desmosomes. **2½**
- c) Write a note on cell-matrix interactions. **2½**
- d) What are gap junctions? Write their functions. **2½**

2. Write a detailed note on eukaryotic cell cycle. **10**

OR

- a) What are the different steps of apoptosis? **2½**
- b) What is the use of embryonic stem cells in therapeutic cloning. **2½**
- c) Describe the process of apoptosis. **2½**
- d) Write a note on regulation of cell division. **2½**

3. Discuss in detail the molecular approach to cancer treatment. **10**

OR

- a) Write a short note on genetic basis of cancer. **2½**
- b) Write a note on tumour viruses. **2½**
- c) Describe in brief the causes of cancer. **2½**
- d) Write a note on oncogenes. **2½**

4. Describe the Separation and Characterization of cells by Ultracentrifugation. **10**

OR

- a) Write the principle and procedure of fluorescence microscopy. **2½**

- b) Describe in short - Animal cell culture. 2½
- c) Write a note on the electron microscopy. 2½
- d) Write a note on plant cell culture. 2½

5. Answer **any ten** of the following:

- a) What is the function of nuclear envelope? 1
- b) What is the role of tight junctions. 1
- c) Cell-cell and Cell-matrix interaction is critical to the development and function of multicellular organisms. True or false? 1
- d) What is necrosis? 1
- e) What is pluripotency of stem cells? 1
- f) Define hematopoiesis 1
- g) What is the full form of FACS? 1
- h) Give any one application of confocal microscopy. 1
- i) What is immunohistochemistry. 1
- j) What is benign and malignant tumour? 1
- k) What is metastasis? 1
- l) Loss of contact inhibition characteristics of cells leads to cancerous growth. True or False? 1
