This question paper contains **4** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **1673**

Unique Paper Code : **107481** **C**

Name of the Paper : **Cell Biology II (Paper CBHT-402)**

Name of the Course : **B.Sc. (Hons.)/(Botany/Biochemistry/Microbiology/Anthropology/ Zoology)**

Semester : **IV**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *Five* questions in all, including Q. No. **1** which is compulsory.

Illustrate your answers with appropriate diagrams wherever necessary.

1. (*a*) Match the following : 5

(*i*)	Singer and Nicholson	Identification of genes involved in apoptosis
(*ii*)	Robert Horvitz	Fluid Mosaic model
(*iii*)	Tim Hunt	G-protein coupled receptors
(*iv*)	Bishop and Varmus	Identification of cyclins
(*v*)	Buck and Axel	Discovery of proto-oncogenes.

P.T.O.

(*b*) Define the following (any *five*) : 5

(*i*) Glycocalyx

(*ii*) Ligand

(*iii*) Pinocytosis

(*iv*) Carcinogen

(*v*) Apoptosome

(*vi*) Pluripotency

(*c*) Expand the following (any *five*) : 5

(*i*) mdr

(*ii*) PGDF

(*iii*) CRE

(*iv*) MAPs

(*v*) GPI

(*vi*) ORC.

2. Write short notes on any *five* of the following : 5×3=15

(*a*) Collagen

(*b*) Significance of Meiosis

(*c*) Lipid rafts

(*d*) Neurotransmitters

(*e*) G_0 phase of the cell cycle

(*f*) Oncogenes

3. Differentiate between any *five* of the following : 5×3=15

(*i*) Channel and carrier proteins

(*ii*) Heterophilic and homophilic interactions

(*iii*) Benign and malignant tumours

(*iv*) Active and passive diffusion

(*v*) Necrosis and apoptosis

(*vi*) Cohesins and condensins.

4. Explain any *three* of the following : 3×5=15

(*a*) Applications of embryonic stem cells

(*b*) Membrane proteins

(*c*) Cell-cell interactions

(*d*) Properties of cancer cells.

5. Attempt any *three* of the following : 3×5=15

(*a*) Give a well illustrated account of receptor mediated endocytosis

(*b*) Describe different phases of the cell cycle

(*c*) Describe the role of receptor protein-tyrosine kinases in cell signaling.

(*d*) Explain the molecular approaches for the treatment of cancer.

6. Attempt the following : 3×5=15

(*a*) What are the molecular mechanisms that regulate caspase activity ?

(*b*) Describe different categories of cell signaling with examples.

(*c*) Explain the structure and function of eukaryotic cell wall.

7. Write notes on any *three* of the following : 3×5=15

(*i*) Tumor suppressor genes

(*ii*) Membrane phospholipids

(*iii*) ABC transporter

(*iv*) Causes of cancer.