[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 675 G

Unique Paper Code : 107481

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

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

Semester : IV

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates:

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer Five questions in all, including, Q. No. 1, which is compulsory. Illustrate your answers with appropriate diagrams wherever necessary.

1. (a) Expand the following terms (any **five**) $(1\times5=5)$

   (i) JAK

   (ii) cdc

   (iii) GAG

P.T.O.

(iv) LDL

(v) GPI

(vi) NAM

(vii) ECM

(b) Match the followings : (1×5=5)

(i) Unit membrane	(a) SV40
(ii) BC1 - 2 family	(b) Robertson
(iii) Fibronectin	(c) Peptide Signal Molecule
(iv) Insulin	(d) Central regulator of apoptosis
(v) Tumour Virus	(e) Principal adhesion protein of connective tissue

(c) Fill in the blanks (1x5=5)

(i) Cancer of connective tissue is calld _____.

(ii) A zipper like protein structure called _____, is formed along the length of paired chromosomes during meiosis.

(iii) The normal cell genes from which the retroviral oncogenes originated are called _____.

(iv) _____ is a calcium binding protein affecting the Ca^{2+} concentration.

(v) _____ is the principal component of cell wall of algae and higher plants.

2. Differentiate between (any **five**) : (3×5=15)

(i) Tight junctions and Gap junctions

(ii) Carrier proteins and Channel proteins

(iii) Programmed Cell Death and Necrosis

(iv) Malignant and Benign tumour

(v) Autocrine and Paracrine signalling

(vi) Anaphase of Mitosis and Anaphase I of Meiosis

3. (a) Describe the programmed cell death in *C. elegans*. (8)

(b) Discuss the different types of cancer. (7)

4. Describe G-protein coupled receptor and regulation of G-proteins with the help of well labelled diagrams. (15)

5. (a) Give a diagrammatic representation of the Fluid Mosaic Model. (6)

(b) Briefly discuss the various polysaccharides of the cell wall. (6)

(c) How does cholesterol affect membrane fluidity? (3)

6. Write short notes on any **three** of the following: (3×5=15)

(a) cGMP pathway in intracellular signaling.

(b) Properties of cancer cell

(c) Somatic cell nuclear transfer

(d) Facilitated diffusion

(e) Pachytene of Meiosis