



**BRAINWARE UNIVERSITY**  
**Term End Examination 2018 - 19**

**Programme – Bachelor of Science (Honours) in Biotechnology**

**Course Name –Cell Biology**

**Course Code – BBT202**

**(Semester –II)**

**Time allotted: 3 Hours**

**Full Marks: 70**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

**Group –A**

(Multiple Choice Type Question)

10 x 1 = 10

1. *Choose the correct alternative from the following*
  - (i) The main function of vacuole are;
 

a. Storage of proteins	b. Lytic process of cell
c. Both a and b	d. All of these.
  - (ii) Mitochondria is bounded by
 

a. A single unit membrane	b. Two unit membranes
c. No membranes	d. Plasma membranes
  - (iii) Endoskeleton of the cell is made up of;
 

a. Endoplasmic reticulum	b. Mitochondria
c. Cell Wall	d. Cytoplasm
  - (iv) Materials enter Golgi complex at;
 

a. Cis region	b. Medial region
c. Trans region	d. Trans Golgi reticulum
  - (v) Diameter of microfilaments is;
 

a. 10 nm	b. 24 nm
c. 7 nm	d. All of these
  - (vi) Solid particles engulfed by plasma membrane are called as-
 

a. Exocytosis	b. Endocytosis
c. Pinocytosis	d. Phagocytosis.
  - (vii) Cell secretion is carried out by;
 

a. Nucleolus	b. Plastids
c. E.R	d. Golgi complex

- (viii) Protein constituent of microtubules is;
- |             |            |
|-------------|------------|
| a. Tubulin  | b. Keratin |
| c. Vimentin | d. Lamin.  |
- (ix) The major component of the nucleus is:
- |           |             |
|-----------|-------------|
| a. DNA    | b. RNA      |
| c. Lipids | d. Proteins |
- (x) Which of the following proteins are required for cancer cell to invade?
- |         |                     |
|---------|---------------------|
| a. MMPs | b. IL6              |
| c. VEGF | d. All of the above |

### Group – B

(Short Answer Type Questions)

3 x 5 = 15

Answer any *three* from the following

- |    |   |     |
|----|---|-----|
| 2. | i. What do you mean by signal transduction?   | 2   |
|    | ii. State the different types of membrane receptors of extracellular matrix.                    | 3   |
| 3. | i. Write short notes on chloroplast genome.   | 2.5 |
|    | ii. Briefly explain the biogenesis of chloroplasts.   | 2.5 |
| 4. | Differentiate between rough endoplasmic reticulum (RER) and smooth endoplasmic reticulum (SER). | 5   |
| 5. | Explain the “Beads on a string” structure of chromosome.  | 5   |
| 6. | i. What is active transport?  | 2   |
|    | ii. Briefly explain carcinogen with examples.   | 3   |

### Group – C

(Long Answer Type Questions)

3 x 15 = 45

Answer any *three* from the following

- |    |   |   |
|----|---|---|
| 7. | (a) Define plasmolysis and de-plasmolysis in cells using diagram. | 5 |
|    | (b) i) Define cytoskeleton of cells.                              | 2 |
|    | ii) What are the different types of cytoskeleton present?         | 3 |
|    | (c) i) Define microfilaments.                                     | 1 |
|    | ii) State the structure and function of microfilaments.           | 4 |
| 8. | (a) i) Describe ultra-structure of mitochondria and its function. | 5 |
|    | ii) Briefly explain the function of lysosomes.                    | 4 |
|    | (b)   |   |
|    | i) Briefly describe Microbodies?                                  | 2 |
|    | ii) Enlist the different types of Microbodies and their function. | 4 |

- |     |     |  |     |
|-----|-----|--|-----|
| 9.  | (a) | Define extracellular matrix. State the components of extracellular matrix.                           | 5   |
|     | (b) | i) What are the functions of membrane receptors?   | 5   |
|     |     | ii) Name the molecules that mediate cell adhesion.   | 5   |
| 10. | (a) | Explain with a suitable diagram the fluid mosaic model of plasma membrane.                           | 6   |
|     | (b) | Give an account of structure and function of the Golgi complex.                                      | 5   |
|     | (c) | Write short notes on mitochondrial DNA.  | 4   |
| 11. | (a) | How protooncogene transform into oncogene?   | 3   |
|     | (b) | Explain how Retinoblastoma (Rb) leads to cancer?   | 3   |
|     | (c) | What is muti hit model of carcinogenesis? State the differences between benign and malignant tumour? | 3+3 |
|     | (d) | How chemotherapeutic drugs shows target specific results again cancer?                               | 3   |

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