22BTU101

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – **BIOTECHNOLOGY**

CEL BIOLOGY

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. What is the most important function of the cell membrane?
   (i) Controls the entry and exit of material
   (ii) Controls only the exit of material
   (iii) Controls only the entry of material
   (iv) Allows entry and exit of materials without any control

2. What is another name for desmosomes?
   (i) Spot desmosomes (ii) Macula desmosomes
   (iii) Both (i) and (ii) (iv) Elastin

3. Which of the following is the largest single membrane bound intra cellular compartment?
   (i) Ribosomes (ii) Nucleus
   (iii) Endoplasmic reticulum (iv) Golgi apparatus

4. Mention the name of the process of sorting and transporting newly synthesized proteins to correct destination in cell
   (i) Protein targeting (ii) Protein trafficking
   (iii) Protein sorting (iv) All of these

5. Which of the following genes are activated by p53
   (i) BAX, Apaf-1 and p21 (ii) BAX and p21
   (iii) GAAD45 and BAX (iv) All of these

SECTION – B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 × 3 = 15)

6. a) Describe about the facilitated diffusion.
   OR
   b) How did eukaryotic cells evolve from prokaryotic?

7. a) How does collagen and elastin work together?
   OR
   b) Summarise the functions of microtubules in the cytoskeleton?

8. a) Sketch and label the nucleus and mention its main functions in a cell.
   OR
   b) Explain briefly about the functions of lysosomes.

Cont...

9. a) How proteins are targeted to mitochondria?

OR

b) How the proteins are transported through the Golgi apparatus?

10. a) Explain the secondary messenger with suitable example.

OR

b) Summarise the etiological factors of carcinogenesis.

SECTION – C (30 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 × 6 = 30)

11. a) Classify the membrane transport protein.

OR

b) Describe the structure and function of cell membrane.

12. a) Categorize the components of extracellular matrix and mention their functions.

OR

b) Appraise the cell junction molecules.

13. a) Differentiate Mitosis and Meiosis

OR

b) Discuss the importance of photosynthesis and its mechanism.

14. a) Explain the process of post translation modifications in endoplasmic reticulum.

OR

b) Highlight on protein sorting techniques.

15. a) Differentiate between ontogenesis and tumour suppressor genes with suitable example.

OR

b) Elucidate the receptor molecule, how which is involved in cell to cell communication.

Z-Z-Z END