

B.Sc. ZOOLOGY
SECOND SEMESTER
CELL BIOLOGY
BSZ – 202

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

- The proteins of the coat of viruses are called
 - Polysomes
 - Capsomeres
 - Capsid
 - Cell coat
- Which of these organelles is present in plant cells and not in animal cells?
 - Plastids
 - Golgi bodies
 - Endoplasmic reticulum
 - Lysosomes
- Statement I: Karyokinesis is the division of nucleus.
Statement II: Cytokinesis is the division of cytoplasm.
 - Statement I is true but statement II is false
 - Statement I is false but statement II is true
 - Both statement I and II are true
 - Both statement I and II are false
- Arrange the following stages of cell division serially
 - S, G₁, G₂
 - G₁, S, G₂
 - G₁, G₂, S
 - S, G₁, G₂
- Who proposed the cell theory?
 - Robert Hooke
 - Louis Pasteur
 - Watson and Crick
 - Schleiden and Schwann
- The size of the smallest cell of *Mycoplasma gallisepticum* is
 - 0.1 mm in diameter
 - 0.1 cm in diameter
 - 0.1 micron in diameter
 - None of the above
- The plasma membrane participates actively in the ingestion of food particles or foreign substances by the process of
 - Endocytosis
 - Active transport
 - Facilitated diffusion
 - Passive transport
- Which of these membrane proteins mediate inflammatory responses?
 - Integrins
 - Selectins
 - Cadherins
 - All of the above
- Which one of the theories is the most accepted model for plasma membrane?
 - Trilaminar model
 - Bimolecular leaflet model
 - Lattice model
 - Fluid mosaic model

10. Statement I: In a lipid bilayer, the hydrophilic heads are polar and face outwards.
Statement II: The hydrophobic tail is non-polar and face inwards.
- Statement I is true but statement II is false
 - Statement I is false but statement II is true
 - Both statement I and II are true
 - Both statement I and II are false
11. The chromosomes found in *Drosophila*'s salivary gland are_____.
- Polytene
 - Lampbrush
 - Supernumerary
 - B-chromosomes
12. Lampbrush chromosomes are found in the .
- Oocytes
 - Cancer cells
 - Lymph glands
 - Salivary glands
13. The centromere is the region of the chromosome that contains_____.
- Nicking occurs
 - Chromatids are attached
 - Nucleoli are formed
 - Crossing-over takes place
14. The chromosomal ends are known as .
- Satellites
 - Centromeres
 - Telomeres
 - Kinetochores
15. A chromosome with a sub-terminal centromere is referred to as_____.
- Acrocentric
 - Acentric
 - Metacentric
 - Telocentric
16. This is not a function of mitochondria
- fatty acid breakdown
 - non-shivering thermogenesis
 - electron transport chain and associated ATP production
 - glycolysis and associated ATP production
17. Structure of golgi apparatus is
- membranous
 - Not membrane bound
 - Flattened membranous sacs
 - Network of tubules
18. Which organelle is a center of manufacturing, storing and transportation?
- Ribosomes
 - Nucleus
 - Vacuole
 - Golgi apparatus
19. Which of the following cell organelles does not contain DNA?
- Nucleus
 - Lysosomes
 - Chloroplast
 - Mitochondria
20. Which of the following cell organelles is called a suicidal bag?
- Lysosomes
 - Golgi bodies
 - Cell membrane
 - Mitochondria

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. What do you mean by cell? Differentiate between prokaryotic and eukaryotic cell with diagram. | 2+4+4
=10 |
| 2. What is the composition of protoplasm? Discuss their physical and chemical properties. | 2+4+4
=10 |
| 3. Explain the arrangement of lipid and proteins in a plasma membrane with suitable diagram. | 6+4=10 |
| 4. Write short notes on <i>any two</i>
a. Functions of plasma membrane
b. Cell size and shape
c. Fluid mosaic model | 5+5=10 |
| 5. Describe briefly the structure, types and function of chromosome? | 4+3+3
=10 |
| 6. Write short notes on
a. Mitochondria
b. Golgi bodies | 5+5=10 |
| 7. Describe briefly the structure and function of endoplasmic reticulum. | 5+5=10 |
| 8. Describe the structure and function of cilia and flagella. | 5+5=10 |

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