

**B.Sc. ZOOLOGY
THIRD SEMESTER
CELL BIOLOGY
BSZ-301 (REPEAT)**
[USE OMR FOR OBJECTIVE PART]

2024/11

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

(Objective)

Marks: 20

1X20=20

Choose the correct answer from the following:

1. A plant cell differs from an animal cell in the absence of
 - a. Endoplasmic Reticulum
 - b. Mitochondria
 - c. Ribosome
 - d. Centriole
2. Diploid chromosome number is found in normal body cell whereas haploid is found in-
 - a. Germ cells
 - b. Brain cells
 - c. Meristematic cells
 - d. Sensory cells
3. A darkly stained body within a nucleus without any prominent membranous boundary is-
 - a. Nucleolus
 - b. Vacuole
 - c. Ribosomes
 - d. Mitochondria
4. Ribosomes are made up of:
 - a. DNA and protein
 - b. DNA and RNA
 - c. RNA and protein
 - d. Protein and lipid
5. Which of the following ions are required for binding of ribosomal subunit?
 - a. Na^{++}
 - b. Mg^{++}
 - c. Mn^{++}
 - d. Fe^{++}
6. Cell organelle that acts as supporting skeletal framework of the cell is
 - a. Golgi apparatus
 - b. Nucleus
 - c. Mitochondria
 - d. Endoplasmic reticulum
7. Lysosomes are involved in-
 - a. Extracellular digestion
 - b. Intracellular digestion
 - c. Both A and B.
 - d. No digestion activity
8. Number of Protofilaments present in microtubule is-
 - a. 12
 - b. 13
 - c. 23
 - d. 46
9. Which of the following filaments have the polarity?
 - a. Only Microtubules
 - b. Microtubules and Microfilaments
 - c. Only Microfilaments
 - d. Microtubules, Microfilaments and Intermediate filaments

10. In 70 S ribosomes, 'S' stand for-
 a. SI unit
 c. Svedverg Unit
 b. Solubility Factor
 d. All of these
11. In the fluid mosaic model -
 a. The protein is arranged in layers.
 c. Lipids have no specific arrangement
 b. The lipid part is fluid with proteins embedded in it
 d. None of the above.
12. When an ion or solute is moved against concentration using energy, the process is called-
 a. Diffusion
 c. Active transport
 b. Passive transport
 d. Regulated diffusion.
13. During which stage of meiosis cell division, do the maternal and paternal chromosomes pair up-
 a. Leptotene
 c. Pachytene
 b. Zygotene
 d. Metaphase
14. Who proposed cell theory-
 a. Watson and Crick
 c. Schleiden and Schwann
 b. Mendel and Morgan
 d. Singer and Nicholson.
15. The stage in which homologous chromosomes move toward the poles of the spindle in meiosis -
 a. Anaphase I
 c. Telophase I
 b. Anaphase II
 d. Telophase II
16. Replication of the DNA takes place in -----phase of the cell cycle.
 a. G1
 c. S
 b. G2
 d. M
17. Which of the following microorganism is the smallest living cell without cell wall-
 a. Virus
 c. Eubacteria
 b. Mycoplasma
 d. Archaeobacteria.
18. Normal pH of protoplasm is
 a. 7
 c. 7.5
 b. 6.8
 d. 8
19. The streaming movement of the protoplasm is called-
 a. Brownian
 c. Cyclosis
 b. Zig-zag
 d. None of these.
20. The term cell was coined by-
 a. Rober Hooke
 c. Leeuwenhock
 b. Robert Brown
 d. Schleiden and Schwann

(Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

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

1. State the differences between a prokaryotic and an eukaryotic cell.
Draw and explain an animal cell. 5+5=10
2. Draw and explain the fluid mosaic model of plasma membrane.
Which factors are responsible for membrane fluidity? Mention about
any two passive transport of plasma membrane. 5+2+3=10
3. Describe the five substages of Prophase I. How is metaphase I and
metaphase II different from each other? 6+4=10
4. What is protoplasm? Explain about the different physical and
chemical properties of protoplasm 2+8=10
5. Write in details with proper illustrations about morphology, structure
and Function of Ribosome. 2+8=10
6. What are Cytoskeletons? Describe different types of cytoskeletons
with proper diagrams. 10
7. Define chromosomes. Write different types of chromosomes on the
basis of position and number of centromere. Write a note on
Lambrush chromosome. 2+4+4=10
8. Write short Note on: (any Two)
a. Mitochondria 5x2= 10
b. Nucleus
c. Golgi complex

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