Reg. No. : .....

Code No. : 20389 E **Sub. Code : AMZO 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Zoology — Core

CELL AND MOLECULAR BIOLOGY

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The study of the structure and composition of cells is called ————

(a) cytotogy (b) anthology

(c) ecology (d) phenology

2. Which of the following cell organelles is called digestive bags?

(a) nucleus (b) lysosomes

(c) chloroplast (d) mitochondria

3. Which of the following is considered as a cell with in a cell?
   (a) Chloroplast (b) Ribosome
   (c) Mitochondria (d) Golgi complex

4. Which organelle is the site of protein synthesis?
   (a) Ribosomes (b) Lysosomes
   (c) Mitochondria (d) Golgi complex

5. Nuclei were first discovered by ————
   (a) Strasburger (b) Fonatana
   (c) Robert brown (d) Robert Koch

6. ———— is a form of cell division which results in the creation of gameter or sex cells.
   (a) Plitosis (b) Meiosis
   (c) Both (a) and (b) (d) None

7. During all division, the spindle fibres attach to the chromosomes at a region called ————
   (a) Chromocentre (b) Kinetochore
   (c) Centriole (d) Chromomere

8. When does synapsis occur during meiosis?
   (a) Zygotene (b) Leptotene
   (c) Diplotene (d) Pachytene

9. Conversion of messages carried by mRNA into aminoacid sequences is called
   (a) Replication (b) DNA repair
   (c) Translation (d) Transcription

10. What is the size of prokaryotic ribosome?
   (a) 80S (b) 70S
   (c) 40S (d) 60S

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe gram staining.

Or

(b) Write the instrumentation of electron microscope.

12. (a) Summarize the functions of lysosomes.

Or

(b) Comment on centrioles.

13. (a) Describe the structure of chromosomes.

Or

(b) Write notes on nuclear membrane.

14. (a) Comment on DNA hybridization.

Or

(b) Explain the initiation of DNA replication.

15. (a) Summarize the properties of genetic code.

Or

(b) Describe synaptonemal complex.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Explain the principle and applications of phase contrast microscope.

Or

(b) Explain compound microscope in detail.

17. (a) Describe the ultra structure of golgi apparatus.

Or

(b) Write an essay on ribosomes.

18. (a) Explain polytene chromosome.

Or

(b) Summarize the properties and treatment of cancer cells.

19. (a) Describe the double helical structure of DNA.

Or

(b) Explain transcription in detail.

20. (a) Write a detailed note on meiosis.

Or

(b) Explain tryp operon.
