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Reg. No. :

Code No. : 10580 E Sub. Code : CMZO 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Third Semester

Zoology – Core

CELL BIOLOGY AND BIOCHEMISTRY

(For those who joined in July 2021 – 2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one is absent in prokaryotes?

- (a) Nuclear membrane and nucleus
- (b) Chromosome
- (c) DNA
- (d) Polysomes

2. Feulgen stains are used to study

- (a) Chromosome
- (b) Mitochondria
- (c) Ribosome
- (d) Lysosome

3. Respiratory organdies of the cell are

- (a) Lysosome
- (b) Mitochondria
- (c) Glyoxisomes
- (d) Peroxisomes

4. Nucleolus was discovered by

- (a) Robert Brown
- (b) Robertson
- (c) Fontonna
- (d) Dujardin

5. Chromosome with a single arm is

- (a) Submetacentric
- (b) Metacentric
- (c) Acrocentric
- (d) Telocentric

6. Synoptonemal complex is formed in

- (a) leptotene
- (b) zygotene
- (c) pachytene
- (d) diplotene

7. _____ is also called soluble RNA.

- (a) rRNA
- (b) mRNA
- (c) tRNA
- (d) 23 SRNA

8. Protein synthesis occurs
(a) Inside the nucleus
(b) Inside the cytoplasm
(c) Nucleoplasm
(d) Nucleolus
9. Amino acids basically contain
(a) NH_2 and COOH (b) COOH group only
(c) NH_2 group only (d) None of the above
10. Where does glycogenesis take place?
(a) Cytosol
(b) Mitochondria
(c) Ribosomes
(d) Endoplasmic reticulum

PART B — (5 × 5 = 25 marks)

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

11. (a) How will you differentiate prokaryotic and eukaryotic cells?
Or
(b) What are the different types of stains?

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12. (a) Describe the structure and functions of Golgi bodies.

Or

- (b) Give a short account on Krebs cycle.

13. (a) Write a short note on types of chromosomes.

Or

- (b) Give an account on types of cancer and carcinogens.

14. (a) Write a short note on tRNA.

Or

- (b) Describe polysomes.

15. (a) Explain the lock and key hypothesis of enzymes.

Or

- (b) Write a brief account on structure of protein.

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PART C — (5 × 8 = 40 marks)

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

16. (a) Give a detailed account on cytological techniques.

Or

- (b) Explain the principle and structure of compound microscope.

17. (a) Describe the structure and functions of mitochondria.

Or

- (b) Describe the structure and functions of nucleus.

18. (a) Describe the DNA replication in detail.

Or

- (b) Write an essay on mitotic cell division.

19. (a) List out the properties of genetic code.

Or

- (b) Write an essay about the mechanism and requirements of protein synthesis.

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20. (a) Classify and enumerate carbohydrates with examples.

Or

- (b) Explain β -oxidation in detail

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