

(6 pages)

Reg. No. :

Code No. : 10748 E Sub. Code : AMZO 41

B.Sc (CBCS). DEGREE EXAMINATION, APRIL 2022.

Fourth Semester

Zoology — Core

CELL AND MOLECULAR BIOLOGY

(For those who joined in July 2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The lever of the _____ is used to adjust the amount of light striking the object being studied.
- (a) Condenser
 - (b) iris diaphragm
 - (c) Adjustment Knobs
 - (d) Objective Lenses

2. Sudan Black B is a specific stain for _____ and is used to stain Golgi apparatus.
- (a) Carbohydrate
 - (b) Protein
 - (c) Phospholipids
 - (d) Nucleic acid
3. _____ can also destroy or degrade bacteria and foreign substances.
- (a) Mitochondria
 - (b) Endoplasmic reticulum
 - (c) Golgi complex
 - (d) Lysosome
4. Stalked F1 particles are present in
- (a) Outer mitochondria membrane
 - (b) Crystae
 - (c) Inner chamber
 - (d) Outer chamber

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5. A malignant tumour is capable of both invading surrounding normal tissue and spreading throughout the body via the circulatory (or) lymphatic systems is called ____
 (a) metamerism (b) metastasis
 (c) apoptosis (d) lysis
6. The nucleolus contains primarily the
 (a) Golgi complex (b) Mitochondria
 (c) Chromosomes (d) Lysosomes
7. Choose the RNA that carries the information for protein synthesis
 (a) tRNA (b) mRNA
 (c) rRNA (d) sRNA
8. Nucleic acids are made up of
 (a) Globulins (b) Albumens
 (c) Nulceosides (d) Nucleotides
9. Operon model was originally proposed by
 (a) Jacob and Monod
 (b) Altmann and Benda
 (c) Bateson and Punnet
 (d) Watson & Crick

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10. Choose the initiation codon from the following protein synthesis

- | | |
|---------|---------|
| (a) AUG | (b) UGA |
| (c) UGC | (d) GUA |

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Compare and contrast prokaryotes and Eukaryotes

Or

- (b) List out different types of stains used in cell biology.

12. (a) Recollect your idea about compounds that occur in ETC.

Or

- (b) Enumerate the list of different functions of Lysosomes.

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 [P.T.O.]



13. (a) Explain the structure and functions of Polytene chromosomes

Or

- (b) Comment on the diagnosis and treatment of cancer.

14. (a) Compare and contrast DNA and RNA.

Or

- (b) Prove that DNA as genetic material with experimental evidence.

15. (a) Enlist the characteristic features of genetic code.

Or

- (b) Trace out the significance of mitosis and meiosis.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Comment on working mechanism of compound microscope.

Or

- (b) Comment on working mechanism of phase contract microscope.

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17. (a) Recollect your idea about ultra structure of Golgi complex.

Or

- (b) Recall your idea about ultra structure of Endoplasmic reticulum.

18. (a) Comment on the structure and functional significance of lamp brush chromosomes.

Or

- (b) Bring out the properties of cancer cell.

19. (a) Trace out the events in DNA replication.

Or

- (b) Discuss different steps of proteins synthesis in prokaryotes.

20. (a) Analyze the term Lac operon in *E.coli*.

Or

- (b) Elucidate the functional unit of gene.

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