

Code No. : 30569 E Sub. Code : CMZO 31

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

Third Semester

Zoology - Core

CELL BIOLOGY AND BIOCHEMISTRY

(For those who joined in July 2021 - 2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- The _____ is also called the plasma membrane.
 - Cell membrane
 - Cell wall
 - Cell plasm
 - None of the above

- A beam of accelerated electrons as a source of illumination is in _____.
 - compound microscope
 - electron microscope
 - phase contrast microscope
 - all the above
- Desmosomes are intercellular junctions that tether intermediate filaments to the
 - Plasma membrane
 - Cell junctions
 - Cell cytoplasm
 - All the above
- The _____ are very large in size as compared to normal chromosomes.
 - giant chromosomes
 - grant chromosomes
 - poly chromosomes
 - none of the above
- In the eukaryotic cell cycle, chromosome duplication occurs during
 - "S phase" (b) "M phase"
 - "T phase" (d) all the above

Page 2 Code No. : 30569 E

- _____ is the process of programmed cell death.
 - apoptosis (b) autolysis
 - ketolysis (d) all the above
- _____ function at specific sites in the ribosome during translation.
 - tRNA (b) rRNA
 - mRNA (d) all the above
- Polysome is a group of ribosomes bound to an _____ molecule.
 - mRNA (b) tRNA
 - rRNA (d) All the above
- The hexose monophosphate shunt, also known as the
 - pentose phyrosphate pathway
 - pentose phosphate pathway
 - phosphate pentose pathway
 - all the above
- Transamination is a chemical reaction that transfers an amino group to a _____ to form new amino acids
 - ketoamino (b) ketoacid
 - ketoamine (d) all the above

Page 3 Code No. : 30569 E

PART B — (5 × 5 = 25 marks)

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

- (a) What is the structure and function of prokaryotic cells?
Or
(b) How many types of staining are there in cytology?
- (a) Describe the structure and function of lysosome?
Or
(b) List out various steps of Krebs cycle?
- (a) Write about the types of chromosomes and functions?
Or
(b) What is the structure of DNA in detail and its types?
- (a) Describe the structure and function of tRNA?
Or
(b) What do you mean by post-transcriptional modification?

Page 4 Code No. : 30569 E

[P.T.O.]

15. (a) List out the different factors that affect enzyme activity?

Or

(b) How many steps does glycogenesis have?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) What is the principle and application of electron microscopy?

Or

(b) Enumerate the different types of fixatives used in histopathology and cytology?

17. (a) Give an account the structure and function of endoplasmic reticulum.

Or

(b) Discuss about the Glycolysis pathway with various steps.

18. (a) Write about the DNA replication process?

Or

(b) Explain the various major steps of programmed cell death.

Page 5 Code No. : 30569 E

19. (a) Describe the term genetic code and its properties.

Or

(b) Explain the steps of protein synthesis in detail.

20. (a) What is enzyme inhibition and its types?

Or

(b) Explain the various steps of beta-oxidation?

Page 6 Code No. : 30569 E