



RP-003-1015019

Seat No. _____

Third Year B. Sc. (Sem. V) (CBCS) Examination

February - 2019

ZOOLOGY : Paper - Z-503

*(Biochemistry, Cytology, Instrumentation Biology, Genetics,
Fundamental Processes)*

Faculty Code : 003

Subject Code : 1015019

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions : (1) Illustrate your answers with neat and labeled diagram.
(2) Figures to the right side indicate full marks for the question.

- 1 (A) Answer the following questions : 4
- (1) Give the example of pentose sugar.
 - (2) Where keratin can be found?
 - (3) Which vitamin is strong antioxidant?
 - (4) In animal, Magnesium is required for the formation of _____
- (B) Answer in Brief : (Any **One** out of two) 2
- (1) Give a note on lock and key theory.
 - (2) Write importance of Carbohydrates.
- (C) Answer in detail : (Any **One** out of two) 3
- (1) Discuss the organization of protein structure.
 - (2) Write an essay on the iron metabolism in the body.
- (D) Write a note on : (Any **One** out of two) 5
- (1) Describe the classification of amino acids along with their structure.
 - (2) Classify vitamins and briefly discuss their functions.

- 2 (A) Answer the following questions : 4
- (1) Define cancer.
 - (2) Define Interphase.
 - (3) Role of cytochalasin B.
 - (4) What is Actin ?
- (B) Answer in Brief : (Any **One** out of two) 2
- (1) What is cytokinesis?
 - (2) Irritation theory for carcinogenesis.
- (C) Answer in detail : (Any **One** out of two) 3
- (1) What are the types of intermediate filaments?
 - (2) Describe behavior and presumed role of centrioles during mitosis.
- (D) Write a note on : (Any **One** out of two) 5
- (1) Describe major features of each meiotic phase.
 - (2) Characteristics of cancer cells.
- 3 (A) Answer the following questions : 4
- (1) Define electrophoresis.
 - (2) What is vectors?
 - (3) What is chromatography?
 - (4) Write the formula of Rf value.
- (B) Answer in Brief : (Any **One** out of two) 2
- (1) Bacteriophage.
 - (2) Partial column chromatography.
- (C) Answer in detail : (Any **One** out of two) 3
- (1) Write a short note on Plasmids.
 - (2) Write the basic principle for the rDNA technology.
- (D) Write a note on : (Any **One** out of two) 5
- (1) Discuss the methods for the gene transfer.
 - (2) Give the detail account on SDS-PAGE electrophoresis.

- 4 (A) Answer the following questions : 4
- (1) Define muton.
 - (2) What is induced mutation?
 - (3) What is deletion?
 - (4) Give the name of Y linked recessive inheritance.
- (B) Answer in Brief : (Any **One** out of two) 2
- (1) Discuss intron and exons.
 - (2) Write the basic symbols for pedigree analysis.
- (C) Answer in detail : (Any **One** out of two) 3
- (1) Explain Amniocentesis.
 - (2) Discuss types of inversion.
- (D) Write a note on : (Any **One** out of two) 5
- (1) Explain molecular structure of gene.
 - (2) Define mutagens and discuss different types of mutagenic agent.
- 5 (A) Answer the following questions : 4
- (1) What is Okazaki pieces?
 - (2) What is transcription?
 - (3) Define function of mRNA.
 - (4) What is genetic code?
- (B) Answer in Brief : (Any **One** out of two) 2
- (1) What is replication fork?
 - (2) DNA Topoisomerases.
- (C) Answer in detail : (Any **One** out of two) 3
- (1) Discuss structure of ribosome.
 - (2) Explain translation process.
- (D) Write a note on : (Any **One** out of two) 5
- (1) Describe the transcription of RNA from DNA.
 - (2) How can be message from mRNA translate into protein.