DBL-003-2015019 Seat No. _____

# B. Sc. (Sem. V) (W.E.F. 2019) Examination

**June - 2022**

## Zoology : Z-503

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

***(New Course)***

**Faculty Code : 003**

**Subject Code : 2015019**

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

**Instructions :** (1) Illustrate your answers with neat and labelled diagrams.
(2) Figures to the right side indicate full marks of questions.
(3) Write any five questions out of 10.

**1** (a) Give answer of following questions : **4**
(1) What is hetyeropolysaccharides ?
(2) Write an example of trioses sugar.
(3) Vitamin A is known as _____.
(4) Write only name of bonds contributing to tertiary structure of proteins.

(b) Write answer in short : **2**
Give brief note on essential amino acid.

(c) Write answer in detail : **3**
Discuss importance of protein.

(d) Write note on : **5**
Give description of urea cycle.

**2** (a) Give answer of following questions : **4**
(1) Write a name of hexoses sugar molecule present in honey.
(2) What is diasccharides ?
(3) Write a name of non-essential amino acid.
(4) In human keratin protein present in _____.

(b) Write answer in short : **2**
Write the importance of vitamin B.

(c) Write answer in detail : **3**
Write note on importance of carbohydrate.

(d) Write note on : **5**
Discuss Secondary structure of protein.

**3** (a) Give answer of following questions : **4**
(1) Give the name of trace minerals. (any two)
(2) Ligases are enzymes catalyzing the _____ together of two molecules.
(3) Write the full name of PUFA.
(4) Define : Prosthetic group.

(b) Write answer in short : **2**
Write note on potassium.

(c) Write answer in detail : **3**
Describe importance of lipid.

(d) Write note on : **5**
Discuss in detail various factors affecting enzyme activity.

**4** (a) Give answer of following questions : **4**
(1) Write a full name of HDL.
(2) The lipid that functions as fuel reserve in animals.
(3) What is active site ?
(4) Approximately what percentage of sodium is present in bone ?

(b) Write answer in short : **2**
Write a note on phosphorus.

(c) Write answer in detail : **3**
Describe lock and key model of enzyme action.

(d) Write note on : **5**
Write a note on $\beta$-oxidation.

**5** (a) Give answer of following questions : **4**
(1) Which material is used to view diakinesis ?
(2) What is angiogenesis ?
(3) Write a function of Intermediate filament.
(4) Define Cancer.

(b) Write answer in short : **2**
Give an account on significance of mitosis.

(c) Write answer in detail : **3**
Write a note only for interphase of cell cycle.

(d) Write note on : **5**
Describe structure and function of microtubule.

**6** (a) Give answer of following questions : **4**
(1) What is seen the arrangement of microtubules in eukaryotic cilla ?
(2) What is carcinoma ?
(3) How many check points occur in cell cycle ?
(4) Write the significance of meiosis.

(b) Write answer in short : **2**
Write a note on G0 phase of cell cycle.

(c) Write answer in detail : **3**
Discuss only types of intermediate filament.

(d) Write note on : **5**
Write any two theories for cancer development.

**7** (a) Give answer of following questions : **4**
(1) Define Muton.
(2) What is promoter gene ?
(3) Define gene.
(4) Which type of abnormality occur in hemophilia disease ?

(b) Write answer in short : **2**
Write a note on concept of gene.

(c) Write answer in detail : **3**
Describe colour blindness.

(d) Write note on : **5**
Describe translocation.

**8** (a) Give answer of following questions : **4**
(1) Give example of radiation mutagens.
(2) Which disorder occurs due to deletion ?
(3) In pedigree analysis, this ■ symbol is used for _____.
(4) Who gave one gene-one enzyme hypothesis ?

(b) Write answer in short : **2**
Brief note on ear pinna.

(c) Write answer in detail : **3**
Explain chemical mutagens.

(d) Write note on : **5**
Describe Amniocentesis.

**9** (a) Give answer of following questions : **4**
(1) Write a function of RNA polymerases.
(2) Write only name of different type of RNA.
(3) The genetic code AUG is also called _____.
(4) Define leading strand.

(b) Write answer in short : **2**
Write application of biostatics.

(c) Write answer in detail : **3**
Write a note on types of DNA (any two)

(d) Write note on : **5**
Explain the mechanisms of DNA replication.

**10** (a) Give answer of following questions : **4**
(1) When will this fork stop replicating DNA ?
(2) What is genetic code ?
(3) What is Okazaki fragments ?
(4) DNA has _____ types.

(b) Write answer in short : **2**
Write a note on any one type of RNA.

(c) Write answer in detail : **3**
Describe DNA topoisomerases

(d) Write note on : **5**
Describe transcription process in prokaryotes.

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