



K25U 2372

Reg. No. :

Name :

V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/
Improvement) Examination, November 2025
(2019 to 2023 Admissions)
CORE COURSE IN ZOOLOGY
5B07ZLG : Biochemistry and Biophysics

Time : 3 Hours

Max. Marks : 40

Instruction : Give illustrations and figures **wherever** necessary.

- I. Essay questions. (**Each** question carries 8 marks). Answer **any two**. (2×8=16)
- 1) Write an essay on different structural levels of proteins.
 - 2) Briefly explain Electron Transport Chain (ETC) and oxidative phosphorylation.
 - 3) Describe the principle, working and applications of SEM.
 - 4) What is colorimeter ? Explain its working principle and applications.
- II. Short Essay. (**Each** question carries 4 marks). Answer **any two**. (2×4=8)
- 5) Illustrate basic structure of lipids. List out any four biological functions of lipids.
 - 6) Describe factors influencing enzyme activity.
 - 7) Explain the principle of chromatography.
- III. Short answer questions. (**Each** question carries 2 marks). Answer **any six**. (6×2=12)
- 8) Distinguish between homopolysaccharide and heteropolysaccharide.
 - 9) What are buffers ? Mention Henderson-Hasselbalch equation.
 - 10) Expand FMN and FAD.
 - 11) Give an account on beriberi.
 - 12) Comment on insulin.
 - 13) Briefly describe the principle of pH meter.
 - 14) Add a short note on phase contrast microscope.
 - 15) Describe autoradiography.

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- IV. Multiple choice questions. (**Each** question carries 0.5 marks). Answer **all**. (8×0.5=4)
- 16) Which of the following is a disaccharide?
a) Glucose b) Fructose c) Galactose d) Maltose
 - 17) Ramachandran plot is used to study
a) Enzyme kinetics b) Protein folding
c) DNA replication d) Glycolysis
 - 18) Km value represents
a) Substrate concentration at half Vmax
b) Enzyme concentration
c) Free energy change
d) Maximum velocity
 - 19) Riboflavin is also known as
a) Vitamin B1 b) Vitamin B6 c) Vitamin B2 d) Vitamin B12
 - 20) The first step in glycolysis is catalysed by
a) Hexokinase b) Phosphofructokinase
c) Aldolase d) Pyruvate kinase
 - 21) Camera lucida is used for
a) Resolving power measurement b) Drawing magnified images
c) Electron microscopy d) Fluorescence imaging
 - 22) Differential centrifugation separates cell components mainly on the basis of
a) Color b) Charge
c) Size and density d) Temperature
 - 23) Which of the following is a catecholamine hormone ?
a) Insulin b) T4 c) Oxytocin d) Progesterone