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School of Biological and Life sciences

Master of Science in Zoology
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem I - P1PT103T - BiochemistryGeneral Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Show the bonding in $AlCl_3$. K2 (2)
- 2) Name the bonds and how they are formed-1) Bonds which are broken during denaturation of protein-2) Bonds which are not broken during denaturation of proteins K1 (3)
- 3) Illustrate the structural differences between monosaccharides, aldoses, and ketoses. How do these variances impact their chemical properties? K2 (4)
- 4) Interpret which DNA double helix do you think would be harder to separate into two strands: DNA composed predominantly of AT base pairs, or of GC base pairs? Why? K2 (6)
- 5) Construct a diagram representing the structural similarities and differences between sugar derivatives, deoxy sugars, amino sugars, and sugar acids. Highlight any functional groups that make them distinct from one another. K3 (6)
- 6) Identify how phosphodiester and glycosidic linkage formed in nucleic acid, mention their importance and what are factors associated with these linkages? K3 (9)
- 7) What is the role of bacterial lipids in microbial physiology, and how does this relate to their classification within the lipid category? K4 (8)
- 8) Dissect diagram of RNA that has a function of decoding an mRNA into protein, mentioning different segments and functions of each segment. K4 (12)

OR

Under physiological conditions, the DNA structure is predominantly in the form B DNA. How this form differs from other forms? How different forms of nucleic acid differs. K4 (12)