

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(First Semester)

Branch BIOTECHNOLOGY

STRUCTURAL BIOLOGY & CHEMISTRY OF PROTEINS

Time: Three Hours

Maximum: 75 Marks

Answer ALL questions
ALL questions carry EQUAL marks (2 + 5 i 8)

- 1 a Define Zwitter ion.
b Write a short notes on membrane proteins with an example,
c What are Receptors? Classify the family of receptors.
OR
d Define a-Helix.
e Give an account on bonds that are responsible for protein structure,
f Give a detailed note on Eukaryotic transcription factors.
- 2 a Define HTI I.
b Give a brief note on DNA binding proteins with a neat sketch,
c Describe a detailed note on the forces that governs protein architecture.
OR
d What is Domain?
e Discuss a note on Ramachandran plot.
f What are chaperons? Describe the mechanism involved in chaperons.
- 3 a Define Centrifugation.
b Write a brief note on principle and applications of 2D gel electrophoresis,
c Discuss on x-ray crystallography.
OR
d Define Electrophoresis,
e Comment on Surface Plasmon Resonance,
f Discuss on Edman's Degradation method in detail.
- 4 a Define chymotrypsin.
b Give a brief note on serine protease.
c Discuss on multifunctional enzyme involved in DNA synthesis.
OR
d What is cyclic peptides?
e Comment on collagen triple helix.
f Give a detailed note on structure and functions of Antimicrobial peptides.
- 5 a What is multiple point mutagenesis?
b Give a brief note on Antibody Engineering.
c Describe the strategies to create better substrate binding and decrease in disulphide bonds.
OR
d Name any two engineered therapeutic proteins with its applications,
e Discuss on the strategies to create temperature tolerance proteins,
f Explain about protein engineered biomaterials with its applications.