

Reg. No.

--	--	--	--	--	--	--	--	--	--



BCH 401

I Semester M.Sc. Degree Examination, December 2018
BIOCHEMISTRY
Bio-Organic and Biophysical Chemistry

Time : 3 Hours

Max. Marks : 70

PART – A

1. Answer **any ten** of the following :

(10×2=20)

- Distinguish between an electrophile and a nucleophile.
- What is buffer ? Name any two.
- What is an epimer ? Give example.
- Write the structure of NAD and mention the heterocyclic ring present in it.
- Why chloroacetic acid is stronger than acetic acid ?
- What is racemic mixture ? Give examples.
- What is a covalent bond ?
- Give the structure of lysine at acidic, neutral and basic pH.
- What are carbanions ? How are they formed ?
- What are chair compounds ?
- Distinguish between pro-oxidant and anti-oxidants with examples.
- Why resonance hybrid structure is more stable than other forms of the structure ?

P.T.O.



PART – B

Answer **any five** of the following : (5×10=50)

2. a) Explain the properties of aromaticity.
b) Give an account on pyridines and thiazole containing heterocycles in biology. (5+5=10)
 3. a) Explain geometrical isomerism with examples.
b) Give the rules for R and S nomenclature of optically active molecule. (5+5=10)
 4. a) Explain the mechanism of base catalysed ester hydrolysis.
b) Explain ligand field theory. (5+5=10)
 5. a) Give an account on structure, bonding and special properties of water.
b) Explain in detail Curtin-Hammett principle. (5+5=10)
 6. a) Give a detailed account on the classification of organic reactions.
b) Explain the bonding in complexes using crystal field theory. Give its merits and demerits. (5+5=10)
 7. a) Importance of water in biological systems.
b) Give the importance of organometals in biology. (5+5=10)
 8. a) Write short notes on Fischer projection form for glucose.
b) How Henderson – Hasselbalch equation is derived ? (5+5=10)
 9. a) Explain the laws of thermodynamics.
b) Explain homo and heterolytic cleavage. Give examples. (5+5=10)
-