

B.Sc. (NEP) Sem.-3 Examination

DSC-C-231

Bio-Chemistry

November-2025

Time : 2-00 Hours]

[Max. Marks : 50

Q1. (A)	Derive Handerson Hasselbalch equation. Give its importance	(6)
(B)	Define: 1. Ampholyte 2. Base 3. Acid 4. pH	(4)
OR		
Q1. (A)	Define buffers and buffer capacity. Explain the role of hemoglobin as aphysiological buffer.	(7)
(B)	Draw a labelled diagram of the pH meter	(3)
OR		
Q2. (A)	Define Surface tension. State the Gibb's Thompson principle. Explain the role of surface tension in digestion of fat and Breathing.	(7)
(B)	Define Viscosity. What are the units of viscosity? Write the formula to calculate relative viscosity.?	(3)
OR		
Q2. (A)	Define Osmotic Pressure. Discuss the physiological importance of Osmotic pressure	(7)
(B)	Define adsorption. List the factors affecting it.	(3)
OR		
Q3. (A)	Discuss the principle, components used and their role in PAGE. List the advantages of PAGE	(7)
(B)	List all the factors affecting electrophoresis. What is C/M ratio.	(3)
OR		
Q3. (A)	Explain principle and separation of amino acids by paper chromatography	(6)
(B)	Give the full form and applications of HPLC	(4)
OR		
Q4. (A)	Draw, label and discuss the parts and working of a Colorimeter.	(6)
(B)	List the four important differences between Colorimeters and Spectrophotometers.	(4)
OR		
Q4. (A)	List the applications of a Spectrofluorometer	(6)
(B)	State and explain Lambert Beer's law.	(4)
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Q5.	Attempt any TEN out of the following:	(10)
1.	List two precautions while using a pH meter.	
2.	Name the electrodes of a pHmeter.	
3.	Give any two reasons why water is considered a universal solvent	
4.	Give any two conditions/diseases when blood viscosity decreases.	
5.	What is membrane hydrolysis.	
6.	State Vant Hoff's laws of osmotic pressure.	
7.	What is the role of agarose in gel electrophoresis.	
8.	Define:Rf	
9.	What is the stationary phase and mobile phase in TLC	
10.	Give any two limitations of Lambert Beer laws.	
11.	What is the relationship between O.D and % T	
12.	Why do we use blank tube in colorimeter	

