Bareilly International University,

Pilibhit Bypass Road, Bareilly (UP) 243006

BPT **Year: I** **Semester: I** **Subject:Biochemistry**

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Assignment No-2

Date of Allotment: 25/09/2023 Date of Submission: 03/10/2023

Q 1.	Calculate the pH of a solution containing $H_3O^+ = 1.6 \times 10^{-2}$ M. (log1.6=0.2010)
Q 2.	Calculate the pH of a solution containing $H_3O^+ = 1.6 \times 10^{-3}$ M.
Q 3.	Calculate the pH of a solution containing $OH^- = 1.6 \times 10^{-4}$ M.
Q 4.	Calculate the pH of a buffer solution prepared by mixing 1.0M Acetic acid and 1.0 M Sodium acetate. ($Ka = 1.77 \times 10^{-5}$ given log1.77=0.248)
Q 5.	Calculate the pH of 0.500 L Buffer solution composed of 0.7 M Formic acid ($Ka = 1.77 \times 10^{-4}$) and 0.5 M Sodium format. log5= 0.699 , log7=0.8450
Q 6.	Calculate pH of a solution 1×10^{-5} M HCl.
Q 7.	Calculate the pOH value of a solution containing 1×10^{-9} M of OH^- , also calculate its pH value.
Q 8.	Calculate pH of a buffer solution that contains 0.1 M of NH_4OH ($Kb = 1 \times 10^{-5}$) and 0.1 M NH_4Cl.
Q 9.	How many moles of Sodium format and formic acid are required to prepare 1 L of a 0.25 M/L buffer solution with pH=4.0 (pKa=4.74)
Q 10.	Calculate the pH of solution containing 1 M of HCl.