JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATIONS-2022
B.Tech-III Semester (Civil)

COURSE CODE (CREDITS): 18B11CE311(3)   MAX. MARKS: 25
COURSE NAME: Chemistry
COURSE INSTRUCTORS: Dr. Poonam Sharma   MAX. TIME: 1 Hour and 30 Minutes

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1(a). What happens when a drop of HCl is added to a mixture of sodium acetate and acetic acid?   2[COII]

(b).   How complexometric titrations are used for the detection of hardness of water? 2[COII]

Q2(a). How corrosion depends upon nature of metal and the corroding environment?3[COIII]

(b).   Explain the pH sensor components in pH meter.   3[COIII]

Q3(a). A pure metal rod half immersed in water starts corroding at the bottom. Why?2[COIII]

(b).   Explain the law of increase of entropy.   2[COII]

Q4(a). Colloids play a very significant role in nature and in our daily life. Justify. 3[COI]

(b).   Why does corrosion occur in steel pipe connected to copper plumbing?   2[COIII]

Q5(a). For the reaction $Ag_2O(s) \rightarrow 2Ag(s) + \frac{1}{2} O_2(g)$: $\Delta H = 30.56$ kJ mol^{-1} and $\Delta S = 6.66 JK^{-1} mol^{-1}$ (at 1 atm). Calculate the temperature at which ΔG is equal to zero. Also predict the direction of the reaction (i) at this temperature and (ii) below this temperature.   2[COII]

(b). Explain how the area of anode and cathode decides the acceleration of corrosion?2[COIII]

Q6. Complete the table , if work done on the system is 6KJ (all values in table are in KJ)

Q	W	E1	E2	ΔE
	6		35	24

2[COII]