Reg. No. : | | | | | | | | | | |

Question Paper Code: 91004

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

First Semester

Mechanical Engineering

19UCY104 - ENGINEERING CHEMISTRY

(Common to Chemical Engineering)

(Regulation 2019)

Duration: 1:45 hour Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1.	Which one of the following pair of atoms most likely to form an ionic bond?	CO1-R
2.	Which among the following is weakest bond?	CO1-R
3	The electronic configuration of an atom with atomic number 8 is	CO1-R
4.	Define the unit of rate constant for a second order reaction is	CO2-R
5.	What type of reaction takes place when an acid dissolves in water?	CO2-R
6.	Differentiate ionic and covalent bond.	CO1 Ana
7.	What is half life period?	CO2 R
8.	Bring out the differences between hard and soft water.	CO3 Ana
9.	What is pitting corrosion?	CO4 U
10.	Classify the types of corrosion	CO4 R
11	Define valence electrons.	CO1 (R)
12	Define octet rule.	CO2 (R)
13	What is pitting corrosion?	CO3 (U)
14	State Pilling-Bedworth rule.	CO4 (U)
15	List any two differences between chemical and electrochemical corrosion.	CO5 (R)

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

11.	Discuss hydrogen bonding with its consequences.	CO1- U	(10)
12.	Derive the integrated rate equation for a second order reaction where the reactants are same concentration.	CO2- U	(10)
13.	How is hardness of water determined by the complexomteric method? Write the necessary calculation	CO3- U	(10)
14.	Describe the demineralization of water by an ion exchange process in detail.	CO3- U	(10)
15.	Discuss the mechanism of dry corrosion	CO4- U	(10)