

PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)
I B.Tech I Semester Supplementary Examinations, July-2024
ENGINEERING CHEMISTRY
(Common to CE and ME)

Time: 3 hours

Max. Marks: 70

Note:

- i. Question 1 shall contain 10 compulsory short answer questions(2 questions from each unit) for a total of 20 marks such that each question carries 2 marks.
- ii. In each of the questions from 2 to the last question there shall be either/or type questions of 10 marks each. Student shall answer any one of them.

Q. No.	Questions	BTL	CO	Marks
1. a)	What is the indicator and buffer used for estimation of EDTA method and what pH is maintained?	K1	CO1	2M
b)	What is meant by foaming?	K1	CO1	2M
c)	What is a primary cell? Give example.	K1	CO2	2M
d)	Define corrosion.	K1	CO2	2M
e)	What is functionality?	K1	CO3	2M
f)	How is sulphur removed from petroleum?	K1	CO3	2M
g)	What are the constituents of composites?	K1	CO4	2M
h)	Define cloud point.	K1	CO4	2M
i)	Write BET equation.	K1	CO5	2M
j)	Discuss stabilization of colloids.	K1	CO5	2M
UNIT-I				
2. a)	Explain Winkler's method for determination of dissolved oxygen.	K2	CO1	5M
b)	Explain scales and sludges.	K2	CO1	5M
OR				
3. a)	Explain electrodialysis method for desalination of brackish water.	K2	CO1	5M
b)	Discuss caustic embrittlement.	K2	CO1	5M
UNIT-II				
4. a)	Illustrate principle and working of hydrogen-oxygen fuel cell.	K2	CO2	5M
b)	Explain electrochemical cell taking an example.	K2	CO2	5M
OR				
5. a)	Discuss electrochemical theory of corrosion.	K2	CO2	5M
b)	Explain electroplating of nickel.	K2	CO2	5M
UNIT-III				
6. a)	Differentiate thermoplastics and thermosetting polymers..	K3	CO3	5M
b)	Discuss (i) ethanol as alternate fuel (ii) cetane number	K2	CO3	5M
OR				

7.	a)	Explain estimation of nitrogen, sulphur and ash by ultimate analysis.	K2	CO3	5M
	b)	Discuss preparation, properties and applications of Thiokol rubber.	K2	CO3	5M
UNIT-IV					
8.	a)	Explain fibre and structural reinforced composites.	K2	CO4	5M
	b)	Write and explain the properties of lubricants.	K2	CO4	5M
OR					
9.	a)	Explain chemical reactions involved during setting and hardening of cement.	K2	CO4	5M
	b)	Explain thick film mechanism of lubrication.	K2	CO4	5M
UNIT-V					
10.	a)	Discuss Freundlich adsorption isotherm.	K2	CO5	5M
	b)	What are the various applications of Nano materials. Explain.	K2	CO5	5M
OR					
11.	a)	Discuss synthesis of colloids.	K2	CO5	5M
	b)	Explain biological method for preparation of nanometals.	K2	CO5	5M