

Reg. No.:



Name:

University of Kerala

Y7717

Fourth Semester FYUGP Degree Examination, May 2026

Value Addition Courses

CHEMISTRY

UK4VACCHE200 - SUSTAINABLE CHEMSITRY

Academic Level: 200-299

2024 Admission

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

**Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark
Each.Answer all questions**

Qn No.	Question	CL	CO
1	Name any one raw material used for biodiesel production.	RE	2
2	Cite an example of an anti-rust solution.	RE	3
3	Illustrate the working principle of solar energy with an example.	UN	4
4	Define anaerobic digestion.	UN	1
5	Define composting.	UN	1
6	Explain why an iron grill is painted frequently.	UN	3

Part B. 8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Differentiate between solar energy and wind energy by highlighting their key characteristics.	UN	4
8	Explain the importance of energy farming.	UN	2
9	Explain why biomass is considered as a renewable energy source.	AP	1
10	Select an appropriate corrosion prevention method for protecting an underground pipeline and justify your choice.	AP	3

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO
11	A) Explain moisture content analysis of biomass characterisation	AP	1, 1

Qn No.	Question	CL	CO
	OR B) Interpret the role of waste- to- energy technology in waste management		
12	A) Contrast biogas and biohydrogen production in terms of process and applications. OR B) Distinguish between aerobic and anaerobic processes in the conversion of biomass to gaseous fuels.	AN	2, 2
13	A) Appraise cathodic protection and anodic protection methods in minimizing corrosion related failures. OR B) Evaluate the differences between erosion and corrosion in terms of their effects on materials.	EV	3, 3
14	A) Plan and explain a renewable energy system for a family home that currently runs on gas and grid electricity. OR B) Invent and compose a simple system that combines renewable and non-renewable energy sources to reduce pollution and increase energy efficiency.	CR	4, 4