

Reg. No.:



Name: JIREEMARIS

University of Kerala

Y7610

Fourth Semester FYUGP Degree Examination, May 2026

Discipline Specific Elective

CHEMISTRY

UK4DSECHE201 - CHEMISTRY FOR RENEWABLE & CLEAN ENERGY - II

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	Material with controllable conductivity is called _____.	RE	2
2	Give one example of a standalone PV application.	RE	3
3	What is free electron theory?	UN	1
4	Why do quantum dots show different colors with size variation?	UN	4
5	Why are batteries important in solar energy systems	UN	3
6	Why do electrons in the conduction band contribute to electrical conductivity?	UN	1

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	How does the generation of electron-hole pairs lead to current in a solar cell?	UN	2
8	Describe the basic working principle of an organic photovoltaic(OPV) solar cell.	UN	4
9	In a p-n junction diode, what happens when it is connected in reverse bias? State the effect on current flow.	AP	1
10	How does MPPT contribute to reduce overall solar system cost over time?	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)		AP	1, 1

