PVP 20

Code: 20BS1102

I B.Tech - I Semester – Regular Examinations – JULY 2021

ENGINEERING CHEMISTRY

(Common to EEE, ECE)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

UNIT – I

1. a) Derive Nernst's equation for single electrode potential and explain the terms in it. Mention its applications. 7 M
   b) Describe the construction and working of Standard Hydrogen Electrode with neat sketch. 7 M

OR

2. a) Write a brief note on electrolytic concentration cell. 7 M
   b) What is an ion selective electrode? Classify and exemplify various types of ion selective electrodes. 7 M

UNIT – II

3. a) Discuss construction, working and uses of Zinc-air battery. 7 M
   b) List out various types of batteries with examples and discuss their advantages and applications. 7 M

OR

4. a) Discuss the chemistry of the working of Li-MnO_2 cell. Mention its applications. 7 M

b) Write an informative note on Hydrogen- Oxygen fuel cell with a special reference to cell reactions and neat sketch. 7 M

UNIT-III

5. a) Write a shot note on p type and n type doped silicon semiconductors. 7 M

b) Discuss physical and chemical properties of silicon. 7 M

OR

6. a) Write a brief note on Chemical Vapour Deposition technique. 7 M

b) Define a solar cell. Explain its construction and working of PV cell. 7 M

UNIT – IV

7. a) What is metal finishing and mention its technological importance? 7 M

b) List out various methods of metal finishing and Explain manufacture of printed circuit board. 7 M

OR

8. a) Explain electroplating of gold and mention its applications. 7 M

b) Apply Electrochemical Machining (ECM) technique to describe the process and advantages. 7 M

UNIT – V

9.	a)	Distinguish between Thermoplastic and Thermosetting plastics.	7 M
	b)	Explain Chemical synthesis of Nanomaterials by Sol-gel method.	7 M
		OR	
10.	a)	Explain the preparation and mention properties and uses of polystyrene.	7 M
	b)	Discuss characterization of nanomaterials by using Scanning Electron Microscope (SEM) with neat sketch.	7 M