

P.E.S. COLLEGE OF ENGINEERING**(AN AUTONOMOUS INSTITUTE)****CHH. SAMBAJINAGAR- 431002****Regular Summer Examination – 2026****Course: F.Y. B. Tech.****Branch : All****Semester : II****Subject Code & Name: BTPESB102T /BTPESA202T, Engineering Chemistry****Max Marks: 60****Date:02/07/2026****Duration: 3 Hr.****Instructions to the Students:**

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

		Marks
Q. 1	Solve Any six of the following.	6x2=12
A)	Definition	1
	Types of hardness with example	1
B)	Disinfection of water by any two methods	2
C)	Definition of higher calorific value	1
	Definition of lower calorific value	1
D)	Definition of Acid value	1
	Definition of Saponification value	1
E)	Reactions at anode in Lithium ion battery.	1
	Reactions at cathode in Lithium ion battery	1
F)	Specific Resistance definition	1
	Formula and unit	1
G)	Well Labeled diagram	2
H)	Statement of Lambert Beer's law	1
	Mathematical expression	1
I)	Structure of rubber	1
	Monomer of rubber	1
Q.2	Solve Any Two of the following.	12
A)	Calculation of hardness due to individual salt	2
	Temporary hardness	1
	Permanent hardness	1
	Total hardness	1
	Correct unit	1
B)	Definition of D.O.	1
	Description	2

	Reactions	2
	Formula to calculate D.O.	1
C)	Diagram for % C and % H	1
	Description of % C and % H	1
	Formula for % C	1
	Formula for % H	1
	Description of % S	1
	Formula for % S	1
Q. 3	Solve Any Two of the following.	12
A)	Definition of Fuel	2
	Any eight characteristics	4
B)	Classification of Liquid lubricant with examples	2
	Classification of Semisolid lubricant with examples	2
	Classification of solid lubricant with examples	2
C)	Diagram of H ₂ - O ₂ fuel cell	2
	Description of H ₂ - O ₂ fuel cell	2
	Reactions	1
	Applications	1
Q.4	Solve Any Two of the following.	12
A)	Diagram of Wheatstone bridge method	2
	Description Wheatstone bridge method	2
	Formula to calculate conductance	2
B)	Principle	1
	Diagram of TLC	2
	Description of TLC	2
	Applications of TLC	1
C)	Principle	1
	Diagram of UV- Visible Spectrophotometer	2
	Description of UV- Visible Spectrophotometer	2
	Applications of UV- Visible Spectrophotometer	1
Q. 5	Solve Any Two of the following.	12
A)	Definition of cement	2
	Chemical composition of Portland cement	2
	Functions of constituent in cement	2
B)	Definition of polymer	2
	Note on Thermoplastic polymer	2
	Example of Thermoplastic polymer with reaction	2
C)	Synthesis of Urea Formaldehyde	2
	Properties of Urea Formaldehyde	2
	Uses of Urea Formaldehyde	2

