

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Supplementary Summer Examination – 2026****Course: F. Y. B. Tech****Semester: II****Branch : All Branches (UD and AF)****Subject Name & Code: Engineering Chemistry (BTBS202)****Max. Marks: 60****Date: 11/07/2026****Duration: 3 Hr.****Instructions to the Students:**

1. Each question carries 12 marks.
2. Question No. 1 will be compulsory and include objective-type questions.
3. Candidates are required to attempt any four questions from Question No. 2 to Question No. 6.
4. 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.
5. Use of non-programmable scientific calculators is allowed.
6. Assume suitable data wherever necessary and mention it clear.

		(CO)	Marks
Q. 1	Objective type questions. (Compulsory Question)		12
1	The indicator used in determination of hardness by EDTA process is _____.	03	1
	a. Phenolphthalein b. EBT c. K ₂ CrO ₄ d. Starch		
2	For regeneration of anion exchange resin _____ solution is used.	03	1
	a. HCl b. NaOH c. KCl d. NaCl		
3	The water which gives good lather with soap is called _____ water.	03	1
	a. hard b. marine c. soft d. sea		
4	If two Phases are present in one component system then the degree of freedom is _____.	04	1
	a. 0 b. 1 c. 2 d. 3		
5	_____ is an independent variable that defines composition of all phases.	04	1
	a. Component b. Phase c. Degrees of freedom d. None of these		
6	In Ag-Pb system, the point which represents equilibrium between solid silver, solid lead and solution of silver and lead is called _____.	04	1
	a. Eutectic point b. freezing point c. melting point d. triple point		
7	Corrosion occurred by moisture is known as _____ corrosion.	02	1
	a. dry b. wet c. oxidation d. microbial		
8	_____ acts as an anode in pitting corrosion.	02	1
	a. Layer b. Film c. Sludge d. Pit		
9	_____ is the last stage of formation of coal.	05	1

	a. Peat	b. Lignite	c. Anthracite	d. Coke		
10	The gravimetric method is used for estimation of _____.				05	1
	a. Carbon	b. Nitrogen	c. Sulphur	d. Oxygen		
11	Methyl orange is used in pH _____ range.				01	1
	a. 6.5 – 8pH	b. 3.2 - 4.5pH	c. 14 – 17pH	d. 7- 8pH		
12	_____ electrode is used for the measurement of pH.				01	1
	a. Silver	b. Platinum	c. Calomel	d. Glass		
Q. 2	Solve the following.					12
A)	Explain in detail the ion exchange process for softening of water.				03	6
B)	Discuss in brief determination of Dissolved Oxygen (DO) by Winkler's method.				03	6
Q.3	Solve the following.					12
A)	Explain condensed phase rule with example.				04	6
B)	Describe in detail one component phase diagram of Water system.				04	6
Q. 4	Solve Any Two of the following.					12
A)	Explain in detail Dry (Direct Chemical) corrosion.				02	6
B)	Discuss oxygen absorption mechanism of corrosion.				02	6
C)	Describe in detail proper designing method to minimize the rate of corrosion.				02	6
Q.5	Solve Any Two of the following.					12
A)	Discuss the types of lubricants in brief.				05	6
B)	Explain proximate analysis of coal.				05	6
C)	Write a note classification of fuel.				05	6
Q. 6	Solve Any Two of the following.					12
A)	Explain the terms a. Conductance b. Molecular Conductance c. Equivalent Conductance d. Cell constant				01	6
B)	Write a note on Hydrogen – Oxygen (H ₂ -O ₂) Fuel Cell.				01	6
C)	Discuss the conductometric titration with any two examples.				01	6
	*** End ***					

