Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-I & II (NEW) EXAMINATION – WINTER 2015

Subject Code: 2110001 Date:22/12/2015

**Subject Name: Chemistry** 

Time: 10:30am to 01:00pm Total Marks: 70

**Instructions:** 

1. Question No. 1 is compulsory. Attempt any four out of remaining Six questions.

- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a)	Objective Question (MCQ)	Mark 07	Attribute
	1.	Hardness of water is expressed in equivalents of (A) MgCO <sub>3</sub> (B) CaCO <sub>3</sub> (C) BaSO <sub>4</sub> (D) MgSO <sub>4</sub>	<b>.</b>	(R/U)
	2.	Temporary hardness of water is caused by the presence of		( <b>R/U</b> )
		<ul> <li>(A) Chlorides of calcium and magnesium</li> <li>(B) Sulfates of calcium and magnesium</li> <li>(C) Bicarbonates of calcium and magnesium</li> <li>(D) Carbonates of calcium and magnesium</li> </ul>		
	3.	Free radical polymerization mechanism requires (A) Catalyst (B) Initiator (C) Fillers (D) Sulphur		( <b>R/U</b> )
	4.	Example of addition polymer is (A) Polystyrene (B) Polyethene (C) Poly vinyl chloride (D) All		( <b>R/U</b> )
	5.	Chemical formula of Rust is (A) Fe <sub>2</sub> O <sub>3</sub> (B) FeO (C) Fe <sub>2</sub> O <sub>3</sub> XH <sub>2</sub> O (D) Fe <sub>2</sub> O <sub>3</sub>		( <b>R/U</b> )
	6.	Ratio of volumes of metal oxides to metal is known as,  (A) Specific mass ratio  (B) Volume ratio  (C) Specific ratio  (D) Specific volume ratio		(R/U)
	7.	Which metal is not employed as Sacrificial anode? (A) Mg (B) Zn (C) Al (D) Na		( <b>R</b> /U)
	<b>(b)</b>		07	
	1.	Thermosetting polymers are (A) Cross linked (B) Heat resistant (C) Non-recyclable (D) All		( <b>R/U</b> )
	2.	Corrosion is a process reverse of of metal.  (A) Destruction (B) Extraction  (C) Rusting (D) Galvanizing		( <b>R/U</b> )
	3.	When temporary hard water is boiled, one of the substance formed is		( <b>R/U</b> )
	4.	(A) CaCO <sub>3</sub> (B) CaSO <sub>4</sub> (C) HCl (D) CO <sub>2</sub> Type of bond in NH <sub>3</sub>		(R/U)

		(A) Covalent (B) forme (C) Both A&B (D) None of		
		these		( <b>R/U</b> )
	5.	Natural rubber is		. ,
		(A) Polychloroprene (B) Cis-Polyisoprene		
		(C) Polyneoprene (D)Trans-Polyisoprene		
	6.	Electrochemical corrosion takes place on,		( <b>R</b> / <b>U</b> )
		(A) Anodic area (B) Cathodic area		
		(C) Near cathode (D) Near anode		
		(c) Ivear earnode (D) Ivear anode		
	7.	In Proximate analysis of coal the % of which is		( <b>R/U</b> )
		determined		
		(A) Nitrogen (B) Sulphur (C) Carbon (D) Fixed carbon		
0.2	(a)	Wilest in his to always and Discours its immediate in	03	( <b>D</b> /II/A)
Q.2	(a)	What is biotechnology? Discuss its importance in	03	(R/U/A)
	<b>(b)</b>	agriculture.	04	(U/A)
	(D)	Give the classification of refractory. Explain its characteristics.	07	(U/A)
	(c)	Write short note on: Fermentation process.	-	( )
		write short note on. I ermentation process.		
<b>Q.3</b>	(a)	Discuss the setting and hardening of cement.	03	(R/U/A)
	<b>(b)</b>	What is polymerization? Give synthesis of nylon.	04	(U/A)
	<b>(c)</b>	Write short note on: Fractional distillation of petroleum.	07	(U/A)
0.4	(a)		02	(D/II/A)
<b>Q.4</b>	(a)	Explain Biodegradable polymer with examples.	03 04	(R/U/A)
	<b>(b)</b>	Give difference between dry and wet process of cement	0 <del>4</del> 07	(U/A) (U/A)
	(c)	manufacture.	07	(6/11)
	,	Describe the manufacture of Portland cement by rotary		
		kiln technology.		
Q.5	(a)	What is pilling bed worth rule?	03	(R/U/A)
	(b)	Explain theory and mechanism of wet corrosion.	04	(U/A)
	(c)	Write short note on corrosion control.	07	(U/A)
Q.6	(a)	Give classification of alloys and its important	03	(R/U/A)
	()	application.		( ' - ' ' )
	<b>(b)</b>	Explain break point chlorination.	04	(U/A)
	(c)	What is desalination of brackish water? Discuss any one	07	(U/A)
		method of desalination.		
0.7	(.)		0.2	(D/II/A)
Q.7	(a)	What are the disadvantages of using hard water in boiler	03	( <b>R/U/A</b> )
	<b>(b)</b>	operations?	Ω4	(TT/A)
	<b>(b)</b>	Calculate the weight and volume of air required for the	04 07	(U/A) (U/A)
	(c)	combustion of 0.5kg of carbon.  What are fibers? Give alassification and application of	0,	(0/11)
	` /	What are fibers? Give classification and application of		
		liquid crystals.		

(A) Covalent (B) Ionic (C) Both A&B (D) None of

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