Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV EXAMINATION – SUMMER 2016

Subject Code:140501 **Date:30/05/2016**

Subject Name:Physical And Inorganic Chemistry

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Describe an experimental method for determining a phase diagram of a two-component system.	**07**
	(b)	Deduce the phase rule equation on the basis of thermodynamics.	**07**
Q.2	**(a)**	Explain the given terms: Thermochemistry, Heat of formation, Heat of solution, Heat of reaction.	**07**
	(b)	State Hess's law of constant heat summation and explain its application.	**07**
		OR	
	(b)	Explain molecular orbital theory with suitable illustrations.	**07**
Q.3	**(a)**	Write a short note on: Calomel electrode and Standard hydrogen electrode.	**07**
	(b)	What is the potential of a half-cell consisting of zinc electrode in 0.01M $ZnSO_4$ solution at 25^0 C, E^0=0.763 V	**07**
		OR	
Q.3	**(a)**	Explain the determination of PH of a solution using glass electrode with its merits and demerits.	**07**
	(b)	Explain Handerson-Hasselbatch equation for buffer solution.	**07**
Q.4	**(a)**	Explain thermo gravimetric analysis with suitable examples.	**07**
	(b)	Explain the IR spectroscopy and UV spectroscopy with suitable illustration.	**07**
		OR	
Q.4	**(a)**	Write a short note on isomerism and physical properties of metals.	**07**
	(b)	Explain the term: [1] Inductive effect [2] Resonance with suitable illustration.	**07**
Q.5	**(a)**	What are explosives? Give the characteristics of an explosive.	**07**
	(b)	Write a note on classification of explosives.	**07**
		OR	
Q.5	**(a)**	What is chromatography? Explain Gas chromatography technique with its principle.	**07**
	(b)	What precautions should be taken while storing the explosives?	**07**

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