Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) • EXAMINATION – WINTER 2016

Subject Code:2173613 Date:18/11/2016

Subject Name: Specialty Pigments & Recent development in Pigment Technology (Department Elective - VII)

Time:10.30 AM to 1.00 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)**	Explain the optical properties of absorption pigments, effect pigments and natural pearls with the help of suitable diagrammatical representation in detail.	**07**
	(b)	Discuss the mica pigment with its schematic illustration of different metal oxide mica pigments.	**07**
Q.2	**(a)**	Describe the process for the manufacturing of aluminum flake pigment with its flake orientation mechanism.	**07**
	(b)	Explain the following terms: (i) Pearl luster pigment (ii) Refractive indices of material (iii) Special effect pigments.	**07**
		OR	
	(b)	What is meant by Specialty pigments? Explain the importance of Specialty pigments with suitable examples.	**07**
Q.3	**(a)**	What is meant by antifouling? Discuss the adverse effects caused by the biological settlement.	**07**
	(b)	Write a note on following: (i) Biocides (ii) Micro fouling	**07**
		OR	
Q.3	**(a)**	Describe the marine environment with schematic illustration of the behaviour of a biocide-based antifouling system exposed to sea water.	**07**
	(b)	Write a note on following: (i) Macro fouling (ii) Antifouling	**07**
Q.4	**(a)**	Explain the following anticorrosive pigments mechanism: (i) Barrier Pigment (ii) Sacrificial Pigment	**07**
	(b)	Discuss the effect of various parameters over the anticorrosive coating with the help of following features: (i) Types of ions (ii) Solubility (iii) Morphology	**07**
		OR	
Q.4	**(a)**	Explain the basics of corrosion with the help of suitable diagram in detail.	**07**
	(b)	Explain the following anticorrosive pigments: (i) Zinc phosphate (ii) Strontium chromate	**07**
Q.5	**(a)**	Explain the ultrasound dispersion with its effect on dispersion of pigment particles.	**07**
	(b)	Discuss the concept of pigment tinters with the machineries used for the preparation of pigment tinters.	**07**
		OR	
Q.5	**(a)**	Explain the cavitation mechanism with the suitable examples.	**07**
	(b)	Discuss the thinning, tinting, straining and filling of finished products in detail.	**07**

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