

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2173613****Date: 15/11/2018****Subject Name: Specialty Pigments & Recent development in Pigment Technology****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.

		MARKS
Q.1	(a) What do you mean by flop index?	03
	(b) What is meant by special effect pigments?	04
	(c) Define: (i) Refractive index (ii) Nano crystals (iii) Nanoparticles	07
Q.2	(a) Define antifouling coating with reference to sustained chemical release?	03
	(b) Describe the phenomenon of fouling with two main types of underwater antifouling coatings.	04
	(c) With suitable schematic representation, explain the mechanism of a biocide based antifouling system.	07
	OR	
	(c) Discuss: The pigments used to formulate antifouling coatings.	07
Q.3	(a) What are the variables which controls Pearl Effect?	03
	(b) Give the applications of the Nano materials.	04
	(c) Explain the Mica Pigment with respect to its chemical formula, properties and its importance.	07
	OR	
Q.3	(a) Define: (i) Quantum dots (ii) CNTs (iii) Quantum wire	03
	(b) Explain the applications of Pearlescent Pigments?	04
	(c) Explain Jablonski Diagram with neat schematic.	07
Q.4	(a) What is DOI? What is difference between DOI and Gloss?	03
	(b) What are the properties of Luminescent pigments?	04
	(c) Give the classification scheme of effect pigments on the basis of opacity or optical impression?	07
	OR	
Q.4	(a) What is Flip Flop Effect? Explain with suitable example.	03
	(b) Establish the difference between: Leafing & Non leafing pigments	04
	(c) Explain the model used to explain the flake orientation with the help of diagram	07
Q.5	(a) Explain the mechanism of corrosion with suitable schematic.	03
	(b) Write down the importance of anticorrosive pigments.	04
	(c) Discuss the barrier and active pigments in detail.	07
	OR	
Q.5	(a) What are anti-corrosive pigments? What are the types of anti-corrosive pigments?	03
	(b) Explain the concept of thermochromism with suitable example.	04
	(c) Give the mechanism of passivation of Iron by chromate pigments?	07
