

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3173620****Date:15/12/2021****Subject Name:Technology of Pigments****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What is special effect? What is metal flop?	03
	(b) Explain special effect pigments? Enlist the factors affecting metallic appearance of effect pigments?	04
	(c) Explain metal flake orientation with schematics?	07
Q.2	(a) Write a short note on: Nacreous Pigments	03
	(b) Give the classification of effect pigments on the basis of difference in refractive indices and optical impressions?	04
	(c) Elaborate the optical properties of absorption, metal effect, natural pearl and pearl luster pigments with schematic representation?	07
OR		
Q.3	(c) Explain the types of aluminum pigments with their manufacturing, properties and applications?	07
	(a) Write a short note on: Corrosion.	03
	(b) Explain the following factors which affects Antifouling Coating:(i) Salinity (ii) P ^H	04
	(c) Explain the Micaceous Pigments with reference to its chemical formula, properties and its importance.	07
OR		
Q.3	(a) Explain corrosion resistance by active and barrier pigments?	03
	(b) Discuss micaceous iron oxide pigment with applications?	04
	(c) Explain the concept of luminescence with Jablonski Diagram?	07
Q.4	(a) What are the variables which controls Pearl Effect?	03
	(b) Explain the applications of Pearlescent Pigments?	04
	(c) Give manufacturing and applications of Mica-CaCO ₃ pigments?	07
OR		
Q.4	(a) Write a short note on: Fluorescence	03
	(b) Explain substrate free pearlescent pigments with example?	04
	(c) Give manufacturing, properties and applications of: a. Zinc Chromate b. Red Lead	07
Q.5	(a) Write a short note on: Prussian Blue Pigments	03
	(b) Elaborate passivation mechanism of corrosion resistance?	04
	(c) What are functional pigments? Explain any one of them?	07
OR		
Q.5	(a) Write a short note on: Ultramarine Pigments	03
	(b) Give the industrial applications of mixed metal oxide pigments?	04
	(c) Give manufacturing, properties and applications of Chromium Oxide Green Pigments.	07
