

P P SAVANI UNIVERSITY

Sixth Semester of B. Tech. Examination

December 2022

SECH3570 Fundamentals to Dyes and Pigment

07.12.2022, Wednesday

Time: 01:00 p.m. To 03:30 p.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

Q - 1	Explain the concept of dyes and state the classification in brief.	[05]	CO 4	BTL 2
	OR			
	Define the following in brief:	[05]	4	1
	a) Exhaustion b) Dye Saturation value c) Dye uptake and dye yield.			
Q - 2	State different types of synthetic dyes and explain in detail direct dyes and reactive dyes.	[05]	5	2
	OR			
Q - 2	State different bonds between dyes and fibres.	[05]	3	1
Q - 3	Write in detail the theories for dye-fibre interaction.	[05]	3	1
	OR			
Q - 3	Explain dyeing of polyester with three different stages.	[05]	5	4
Q - 4	State important factors and considerations in dyeing blends.	[05]	4	2
	OR			
Q - 4	Explain in detail the blending procedure for Cotton and Polyester fibres with following points: (a) Materials and methods, (b) Standardised recipe and (c) Procedure of dyeing.	[05]	4	1
Q - 5	Explain in detail the rate of dyeing.	[05]	3	4
	OR			
Q - 5	Define Colour Fastness and explain Grey Scale in detail.	[05]	4	1
Q - 6	State the different diffusion models and explain any one in detail with diagram.	[05]	5	2
	OR			
Q - 6	Explain Pore Diffusion Model in detail.	[05]	5	2
	SECTION - II			
Q - 1	Define pigment and state functions of pigments in paints.	[05]	1	1
	OR			
Q - 1	Explain different factors for selection of particular type of pigment.	[05]	4	2
Q - 2	Explain the detailed classification of pigments.	[05]	1	2
	OR			
Q - 2	Explain any five inorganic pigments in detail.	[05]	1	2
Q - 3	Explain hue with primary, secondary and tertiary colours.	[05]	1	2
	OR			
Q - 3	Explain the following terms: colour intensity, transparent colours, opaque colours, warm and cool colours.	[05]	1	1
Q - 4	Explain the synthesis of Copper Phthalocyanine blue pigment.	[05]	2	2

- OR**
- Q - 4 Explain additive and subtractive colours. [05] 1 2
- Q - 5 Discuss HSV model with opposite and complementary colours. [05] 2 3
- OR**
- Q - 5 State the function of fillers and pigment extenders in paints. Explain any five fillers and pigment extenders. [05] 2 4
- Q - 6 Write the names of different black pigments. State their physical and chemical properties. Explain any one method of synthesis. [05] 1 1
- OR**
- Q - 6 Write the names of different coloured pigments. State their physical and chemical properties. Explain any one method of synthesis. [05] 1 1

CO : Course Outcome Number BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create