

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3173623****Date:29/12/2021****Subject Name:New development in dyes****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 do you mean by functional dyes?	03
	(b) Discuss metal complex dyes with reference to its types, features & applications?	04
	(c) Discuss the various methods of dyeing.	07
Q.2	(a) What is digital printing? Give its merits of it.	03
	(b) Explain the role of Anilox Roller in printing machine	04
	(c) Discuss gravure printing with its advantages and disadvantages?	07
OR		
	(c) Discuss Screen Printing with neat sketch, working, principle & applications?	07
Q.3	(a) What is Vector Image in digital printing?	03
	(b) What is Non-Impact Printing Technology? Enlist its merits?	04
	(c) What is laser printing? Discuss the steps involved in it in detail.	07
OR		
Q.3	(a) Write a short note on: Duplex Printing	03
	(b) What are green solvents? Explain their function & significance.	04
	(c) Give the principles of electrophotography printing?	07
Q.4	(a) Write a short note on: Electrochemical Dyeing	03
	(b) Give the synthesis route of any one of the green solvents?	04
	(c) With working, principle, schematics and methods of ink deposition, explain ink jet printing?	07
OR		
Q.4	(a) What is Thermo chromic System?	03
	(b) Write a short note on: Dye-Sensitised Solar Cell (DSSC).	04
	(c) Discuss various food dyes with their commercial applications?	07
Q.5	(a) What is supercritical CO ₂ ? Give its function?	03
	(b) What are solvent dyes?	04
	(c) Explain the Plasma Technology in detail.	07
OR		
Q.5	(a) Write a short note on: Semi Permanent Hair Dyeing	03
	(b) What are hair dyes? Explain its various types with examples.	04
	(c) Discuss various combinations of primary intermediates and couplers used in permanent hair colors?	07
