Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3173623   **Date:19-12-2023**
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 are functional dyes? Enlist example of it.	**03**
	(b)	What are metal complex dyes? Explain it with reference to its types, features & applications?	**04**
	(c)	Discuss the various steps involved in the process of dyeing.	**07**
Q.2	**(a)**	What is printing? Give its merits & demerits of it.	**03**
	(b)	What is digital printing? Give its merits & demerits of it.	**04**
	(c)	Anilox Roller plays important role in printing machine. Justify.	**07**
		OR	
	(c)	What is Screen Printing? Explain it with neat sketch, working, principle & applications?	**07**
Q.3	**(a)**	What is gravure printing?	**03**
	(b)	What is offset printing? Enlist its merits & demerits?	**04**
	(c)	Explain laser printing with reference to steps involved in it.	**07**
		OR	
Q.3	**(a)**	Write a short note on: Duplex Printing	**03**
	(b)	What are the features of green solvents?	**04**
	(c)	Explain the electrophotography printing with principle?	**07**
Q.4	**(a)**	What is Electrochemical Dyeing?	**03**
	(b)	What are the industrial applications of green solvents?	**04**
	(c)	Explain ink jet printing with regard to methods of ink deposition.	**07**
		OR	
Q.4	**(a)**	What is Thermochromism?	**03**
	(b)	Write a short note on: Dye-Sensitised Solar Cell (DSSC).	**04**
	(c)	Discuss various hair dyes with their commercial applications?	**07**
Q.5	**(a)**	What is supercritical CO_2? Give its function?	**03**
	(b)	Write a short note on: solvent dyes	**04**
	(c)	What is Plasma Technology? What is its significance in dye sectors?	**07**
		OR	
Q.5	**(a)**	Write a short note on: Demi Permanent Hair Dyeing	**03**
	(b)	What are food dyes? Explain food adulterants used along with food dyes.	**04**
	(c)	Enlist various combinations of couplers used in permanent hair colors? Explain any one of them.	**07**

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