Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, MAY 2025

PRINTING AND PACKAGING TECHNOLOGY

PT 5404 OFFSET PRINTING TECHNOLOGY

(Regulation 2019)

Time:3hrs Max. Marks: 100

CO1	Describe the principle of offset printing process and image carriers
CO 2	Explain the sheet feeding mechanism
CO 3	Infer the design principle of sheet fed offset machines
CO 4	Identify factors influencing print quality
CO 5	Demonstrate the sequence of press operating procedures and solve print problems

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)

(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1	Offset plates are chemically separated - how?	2	1	L2
2	Why gum thinning down is necessary?	2	1	L1
3	What is 3-point register system?	2	2	L2
4	How the half sheet work planned?	2	2	L1
5	Give the salient features of helical gears.	2	3	L1
6	Comment on the need for emulsification.	2	3	L2
7	Give the functions of durometer.	2	4	L1
8	State the working of ductor roller.	2	4	L2
9	Differentiate slur and doubling occur during printing.	2	5	L1
10	What is optical dot gain?	2	5	L2

PART- B(5x 13=65Marks)

(Restrict to a maximum of 2 subdivisions)

Q.No	Questions	Marks	CO	BL
11 (a) (i)	Appraise highlighting the key properties and applications of commonly used base materials in printing plate making.	7	1	L4
(ii)	Evaluate the different types of graining processes used in plate preparation.	6	1	L5
	OR			
11 (b) (i)	Using a neat diagram explain the steps involved in pre sensitized offset plate preparation.	7	1	L4
(ii)	Assess how is the contact angle related to the wettability of a surface?	6	1	L5
12 (a)	Explicate the necessity and operational principle of no-sheet and double-sheet detectors in offset printing machines	13	2	L4
	OR			

12 (b)	With a neat diagram differentiate the concept of Sheet insertion and forwarding systems.	**13**	2	L4
13 (a) (i)	Illustrate and describe the mechanisms used for clamping the blanket and plate in an offset printing press.	**13**	3	L3
	OR			
13 (b)	Explicate the need for sheet reversal in perfecting presses and describe, with suitable diagrams, the various reversal systems used in modern offset presses to enable perfecting.	**13**	3	L3
14 (a)	Describe the basic configuration of the inking system in a single-colour offset press. Support your explanation with a clear, labelled diagram.	**13**	4	L3
	OR			
14 (b)	Explain the attributes, types and significance of blanket and describe its manufacturing procedure in detail.	**13**	4	L3
15 (a)	With suitable diagram elucidate the configuration of a **chilling and coating unit.**	**13**	5	L4
	OR			
15 (b)	Write the significance and working principle of **Automatic plate fixing unit and roller washing device** in a printing machine.	**13**	5	L4

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No	Questions	Marks	CO	BL
16. (i)	Design a quality control workflow for an offset printing job aimed at achieving ISO 12647-2 compliance.	8	5	6
(ii)	Create or develop a test chart using quality control aids and explain how each component contributes to maintaining and verifying print quality .	7	5	6