RollNo. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

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

PRINTING AND PACKAGING TECHNOLOGY
VI Semester
PT 5004 Web Offset Printing Technology
(Regulation 2019)

Time:3hrs Max.Marks: 100

CO1	Analyze different configurations, components and mechanisms of a web offset machine
CO2	Identify and solve problems related to runnability and printability of substrates
CO3	Summarize the design concepts of inking and dampening system and devise methods to ensure conformance to quality standards.
CO4	Explain the construction of drying, chilling and folding units
CO5	Describe the components of mailroom system

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	When and by whom Lithographic printing was invented?	2	CO1	L1
2	Define the use of a folder and the product it helps to create.	2	CO4	L3
3	Name the four sides of a web offset printing press.	2	CO1	L2
4	In Web Offset the drying time of ink on paper poses a significant challenge. How is this issue addressed?	2	CO3	L4
5	Classify the Web offset machines based on Jobs.	2	CO1	L5
6	Enumerate the various operations that an in-line press can do.	2	CO5	L1
7	Is it possible to change the cut-off length in in-line press? How?	2	CO4	L4
8	What is the web tension if the infeed and outfeed surface speeds are the same?	2	CO2	L6
9	Infer the need for former in web offset.	2	CO1	L2
10	How fanout problem occurs?	2	CO2	L3

PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	What is the most cost-effective printing process for high-volume book production? Discuss in detail.	13	CO5	L5

	OR			
11 (b)	What are the points to be considered before establishing the terms of contract while purchasing a web offset machine?	**13**	CO5	L5
12 (a)	Explain with a neat diagram the working principle of a closed loop: Pneumatic tension sensing and control system	**13**	CO1	L3
	OR			
12 (b)	Appraise the importance of Hydraulic tension sensing and control system and describe its function and operation.	**13**	CO1	L3
13 (a)	(i) How does zero speed pasting work in a web offset machine?	**8**	CO2	L4
	(ii) An accumulator has a 3-meter stroke and 4 rollers on the movable arm. What is the splicing time needed to complete the operation if the machine runs at 200 m/min?	**5**		
	OR			
13 (b)	(i) Explain how flying pasting works in a web offset machine?	**8**	CO2	L4
	(ii)The diameter of new reel for pasting is 1100mm. The machine speed is 60,000 copies per hour. Cut of length is 546mm. For successful pasting find the r.p.m. at which the new reel should be rotated?	**5**		
14 (a)	Describe the mechanism employed to obtain plate's circumferential and side register in blanket-to-blanket press.	**13**	CO3	L3
	OR			
14 (b)	(i) Explain the working principle of web edge aligners.	**8**	CO3	L3
	(ii) Distance between two rollers in a steering mechanism is 600mm. If the web edge has to be moved to 25 mm what is the angle through which it must be tilted.	**5**		
15 (a)	Discuss the essential functions of an inking system and explain how different elements help to achieve them.	**13**	CO3	L2
	OR			
15 (b)	Discuss the fundamental requirements of a dampening system. Explain any one system in detail.	**13**	CO3	L2

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	(i) Illustrate and derive the formula for the Resultant Force (Fr), on a tension sensing roller.	7	CO1	L6
	(ii) What is the force factor for different wrap angles from 30°-180° at an increment of 30°?	8