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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, MAY/JUNE 2024

PRINTING AND PACKAGING TECHNOLOGY

IV Semester

PT5402 FLEXOGRAPHY AND CONVERTING PROCESS

(Regulation 2019)

Time: 3hrs

Max. Marks: 100

CO 1	State the factors influencing design for flexography.
CO 2	Design and optimize the plate preparation process
CO 3	Explain the steps in the image carrier preparation and mounting
CO 4	Discuss about the working of flexographic press and its control.
CO 5	Implement quality control in flexographic printing workflow

BL – Bloom's Taxonomy Levels

(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	Justify the need for ± 7.5 degree screening in flexography.	2	1	L2
2	Suggest any two solutions for VOC emission reduction.	2	1	L1
3	What is light finishing?	2	2	L2
4	Classify the direct image plates.	2	2	L1
5	Why should we do plate staggering?	2	3	L2
6	Write the modifications of impression cylinder.	2	3	L1
7	Brief the purpose and types of web viewing devices.	2	4	L1
8	Differentiate pneumatic shafts and chucks.	2	4	L2
9	Name any four visual characterization factors.	2	5	L1
10	Define- Press optimization	2	5	L2

PART- B (5 x 13 = 65 Marks)

(Restrict to a maximum of 2 subdivisions)

Q. No	Questions	Marks	CO	BL
11 (a) (i)	Discuss the consideration of any four page elements in designing flexography page preparation.	8	1	4
(ii)	Describe the importance and consideration of printing barcodes.	5	1	3
OR				
11 (b) (i)	Explain the solvent recovery systems under Environment and safety aspect with simple sketch.	5	1	3
(ii)	Explain the principle of flexo-offset and flexo-gravure with schematic diagram.	8	1	4
12 (a) (i)	Differentiate any four production stage variations between sheet and liquid photo polymer plates.	8	2	4
(ii)	Write the features of special type of plates classified under rubber and polymer.	5	2	3

12 (b) (i)	Briefly write the limitations of digital dots and explain the preparation of any one method used for developing flat top direct imaged plates.	8	2	4
(ii)	Describe the working principle of any one equipment used in the preparation of liquid polymer plates.	5	2	3
13 (a) (i)	Using a neat diagram describe the various features and functions of basic parts of flexography printing press in detail.	8	3	3
(ii)	Write the step by step procedure for off line plate mounting.	5	3	4
OR				
13 (b) (i)	Discuss the importance and salient features of anilox in detail.	8	3	3
(ii)	Explain how the mounting tapes are selected for different type of jobs.	5	3	4
14 (a) (i)	Explain the tension zones and how the web tension can be controlled circumferentially.	8	4	4
(ii)	With schematic diagram explain the rewinding types.	5	4	3
OR				
14 (b) (i)	Explain any one method of film surface treatment in detail.	5	4	4
(ii)	Calculate gear teeth to print 10" repeat using 1/8" CP gears and Calculate the repeat of a cylinder with a 15 DP gear that has 60 teeth.	8	4	3
15 (a) (i)	Describe the importance and steps of process characterization in detail.	8	5	4
(ii)	Discuss the significance of Screen characterization.	5	5	3
OR				
15 (b) (i)	Explain the functions of any five quality control aids in a control strip	8	5	4
(ii)	Discuss various print variables related to plate and print.	5	5	3

PART- C (1 x 15 = 15 Marks)
(Q.No.16 is compulsory)

Q. No	Questions	Marks	CO	BL
16.	i. Which type of image carrier can be used in the printing of wall paper? Explain its preparation.	7	2	6
	ii. Discuss any four problems with its causes and remedies related to flexo plate and ink .	8	5	5

