

Roll No.

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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

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

PRINTING AND PACKAGING TECHNOLOGY

Fourth Semester

PP23401 – OFFSET PRINTING TECHNOLOGY

(Regulation 2023)

Time: 3hrs

Max. Marks: 100

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| CO 1 | 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 the importance of blanket, rollers as influencing factors in print quality. |
| CO 5 | Demonstrate the automatic press operating procedures and solve print problems. |

BL – Bloom's Taxonomy Levels

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

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

| Q. No | Questions | Marks | CO | BL |
|-------|---|-------|----|----|
| 1 | Define the principles of lithography. | 2 | 1 | L1 |
| 2 | Describe the role of contact angle in Lithography. | 2 | 1 | L2 |
| 3 | Illustrate the importance of pile height governor. | 2 | 2 | L2 |
| 4 | Compare No sheet and Double sheet detectors. | 2 | 2 | L2 |
| 5 | Define undercut. | 2 | 3 | L1 |
| 6 | What is called equal diameter rolling? | 2 | 3 | L1 |
| 7 | Recall some physical characteristics of blankets used in offset printing. | 2 | 4 | L1 |
| 8 | Emulsification of ink and dampening solution - Illustrate | 2 | 4 | L2 |
| 9 | State Image blinding? | 2 | 5 | L1 |
| 10 | What are called hybrid presses? | 2 | 5 | L1 |

PART- B (5 x 13 = 65 Marks)

(Restrict to a maximum of 2 subdivisions)

| Q. No | Questions | Marks | CO | BL |
|---------------|--|-------|----|----|
| 11 (a) (i) | Analyze properties of the Image carrier required to retain the ink on its surface used in lithography and also mention the materials required. | 6 | 1 | L4 |
| (ii) | Categorize some Quality control aids used in Printing. | 7 | 1 | L4 |
| OR | | | | |
| 11 (b) (i) | Identify the requirements of an effective Plate exposing unit. | 7 | 1 | L4 |
| (ii) | Examine how wettability of solid surface can be enhanced in printing. | 6 | 1 | L4 |

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|---------------|--|---|---|----|
| 12 (a) (i) | Identify and explain about the fundamental elements used in feeder table of the offset printing machine. | 6 | 2 | L3 |
| (ii) | Construct a general note on three point register system in Offset printing. | 7 | 2 | L4 |
| OR | | | | |
| 12 (b) (i) | Examine in detail about the sheet insertion systems used in offset printing machine with neat sketch. | 8 | 2 | L4 |
| (ii) | Distinguish between the automatic pasters used in Web offset press. | 5 | 2 | L3 |

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|---------------|---|---|---|----|
| 13 (a) (i) | Explain how to determine the squeeze pressure of the blanket cylinder used in offset printing with neat sketch. | 8 | 3 | L4 |
| (ii) | Identify and explain about the accessories required for effective sheet delivery. | 5 | 3 | L4 |
| OR | | | | |
| 13 (b) (i) | Explain the function of Anti set-off spray devices with neat sketch. | 8 | 3 | L5 |
| (ii) | Discuss the necessary safety precautions to be followed in press room. | 5 | 3 | L3 |

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|---------------|--|---|---|----|
| 14 (a) (i) | Determine the basic requirements and performance attributes of blankets used in printing with neat sketch. | 8 | 4 | L3 |
| (ii) | Derive the properties of elastomers used for rollers in printing. | 5 | 4 | L4 |
| OR | | | | |
| 14 (b) (i) | Explain the application of UV coaters. | 5 | 4 | L5 |
| (ii) | Discuss about the types and the functions of dampening systems in offset printing. | 8 | 4 | L4 |

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|---------------|---|---|---|----|
| 15 (a) (i) | Prepare a chart to determine the make ready operations to be carried out in offset printing. | 7 | 5 | L6 |
| (ii) | Demonstrate the necessities of multi-color printing. | 6 | 5 | L5 |
| OR | | | | |
| 15 (b)(i) | Discover the various drying operations performed in printing. | 6 | 5 | L4 |
| (ii) | Elaborate the importance of ISO 12647-2, and also about some latest Emerging Trends in offset printing. | 7 | 5 | L4 |

PART- C (1 x 15 = 15 Marks)

(Q.No.16 is compulsory)

| Q. No | Questions | Marks | CO | BL |
|--------|--|-------|----|----|
| 16 (i) | Predict and evaluate various print problems occurred and also propose some solutions to solve it in offset printing. | 8 | 5 | L6 |
| (ii) | Chemistry plays a the major roll in Offset Printing - Justify | 7 | 1 | L5 |

