B.E. PRINTING ENGINEERING THIRD YEAR FIRST SEMESTER - 2019

FLEXO AND GRAVURE

Time : Three hours | Full Marks : 100

Use Separate Answer-scripts for each Part.

PART - I

Answer ***question no. 1 and 5*** and any ***two*** from Group-B.

Group - A

1. Describe the gravure printing principle with diagram. Also describe the different cell characteristics. 6+4=10

Group - B

2. a) Why does gravure give high quality output and long press run? 5

b) Compare between sleeve cylinder and shaft cylinder in gravure printing. 5

c) How the surface treatment is done on film surface in gravure printing? 3

d) Why the gravure cylinders are coated with chromium? 2

3. How the gravure cylinders are prepared by using diffusion etch process and electromechanical process? Discuss each process in the light of their merits and demerits and also draw the diagrams of different opening and depth of cells. 15

4.a) Mention the necessary features of a doctor's blade used in gravure printing. How many types of doctor's blade profiles are available? 3+3=6

b) Discuss briefly the factors which influence drying in a gravure printing unit. 5

c) Which characteristics should gravure inks have? 4

Group - C

5. Write short notes on any *two*: 2x5=10

a) Streaking and bleeding in gravure.

b) Cylinder wear and pigment settlement in gravure.

c) Drying and colour strength in gravure.

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FLEXO AND GRAVURE

Time-3 hrs. **Full Marks: 50**

PART - II (Use separate Answer Script)

Answer any **two** of the following questions:

1. a)Explain the different types of flexographic inking systems with necessary diagrams.
   b) Briefly describe about the types of anilox roll based on roller surface.
   c) Solvent choice can be influenced by the colorant-justify your answer.

[10+5+5=20]

2. a) Why are the cell count and cell depth of anilox roller important in flexographic printing?
   b) What are the properties of flexographic ink needed to be controlled and why?
   c) What are the comparison between photopolymer plate and rubber plate?
   d) How will you define improper etching during rubber plate making process?

[6+8+4+2=20]

3. Discuss about :
   a. Stack Press
   b. Anilox Engraving angles
   c. Cushion Sticky back
   d. Flexo substrates

[5+5+5+5=20]

4. a)Give Reasons and Solutions of the flexographic printing Problems:
i) Bleeding ii) blocking iii) dot bridging
b) How does the substrate wetting influence the printing quality on film and foil substrate in flexographic printing. [(5+5+5)+5=20]

Answer any **two** of the following questions:

i) Describe any anilox roll cleaning process in flexoprinting . 5
ii) What are the reasons of water based flexographic ink to be preferred over solvent based ink. 5
iii) Why do you prefer ceramic anilox roll over mechanical engraved anilox roller? 5
iv) Give the example of different types waxes in flexographic ink and what are the importance of using wax? Give formulation of flexographic ink for metal foil printing (3+2=5)