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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

V SEMESTER B.TECH. (PRINT AND MEDIA TECHNOLOGY)

END SEMESTER EXAMINATIONS, NOV 2019

SUBJECT: FLEXOGRAPHY, GRAVURE AND SCREEN PRINTING [PMT 3101]

REVISED CREDIT SYSTEM

(14/11/2019)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

1A. What are the variations possible with flexo printing unit? Explain the situations in which these variations are made.

1B. With neat sketches, explain the three types of sheeters used on gravure inline roll-to-die cut presses.

1C. How do you determine the optimum exposure time for both direct and indirect stencils. Explain the under and over exposure results for indirect stencils.

[04 + 03 + 03]

2A. Which flexo presses use nip-fed inking system? Explain with neat diagram the advantage of using such inking system.

2B. Explain the different mesh and squeegee parameters that help in varying the ink deposit on substrate.

2C. With a neat sketch, explain the working principle of fixed carbon bed solvent recovery plant used in gravure industries.

[04 + 03 + 03]

3A. What are the 4 sectors of gravure industry? Explain each sector with 2 product examples.

3B. How does mesh color, mesh grade and mesh weaving structure, have effect on print quality? Explain.

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3C. Describe the working principle of three types of roll followers used on flexo presses with simple diagrams.

[04 + 03 + 03]

4A. i. Calculate mesh opening and TWIV of mesh with count 280 TPI, thread diameter 38 μ and fabric thickness 74 μ .
 ii. Explain with neat sketches, the ON and OFF contact screen printing methods with their applications.

4B. i. Draw a publication gravure press with required no. of print stations, that can print 24 page signature with all pages printed in 2 colors and folded using former and jaw folder.
 ii. Why does publication gravure press use reversing units? Justify.

4C. What are the different types of sensors used in web guides? Explain their features and applications.

[(02+02) + (02+01) + 03]

5A. i. Explain the role of banded rolls in specifying the right anilox roller for a given application.
 ii. What are the two types of impression throw-off systems used on flexo presses? Describe each with neat diagrams.

5B. Why does ESA required on high speed gravure presses? Explain. Compare single layer and two layer ESA impression roll designs and their usage on different ESA systems.

5C. Explain with neat diagram the components and working principle of cylinder bed screen printing press.

[(02 + 02) + 03 + 03]