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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL

A Constituent Institution of Manipal University

I SEMESTER M.TECH (PRINTING AND MEDIA TECHNOLOGY)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: PRINTING TECHNOLOGY [PME 5101]

**REVISED CREDIT SYSTEM
 (24/11/2016)**

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** Explain the different configurations of Blanket-to-Blanket offset presses with neat diagrams.
- 1B.** Explain the different configurations of flexo presses with neat sketches and mention 2 advantages and 2 disadvantages of each of them.
- 1C.** With the flow diagram explain the conventional workflow of all the three departments of printing industry.

[04 + 04 + 02]

- 2A.** Explain the working principles of the following digital printing processes with neat diagrams:
 - i. Electrography
 - ii. Magnetography
- 2B.** Explain the working principle of convertible perfecter offset press with neat diagram. Why is it called convertible perfecter?
- 2C.** Explain the three tension zones of flexo web-fed presses and the principles of different types of roll followers used as tension control systems.

[(02+02) + 03 + 03]

- 3A.**
 - i. With a neat diagram of conventional dampening system explain the materials and functions of all the rollers. Why is it called intermittent dampening?
 - ii. Explain the role of squeegee in screen printing.

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3B. Explain the working principle of offset lithography with a neat diagram of an offset printing unit.

3C. Explain the working principles of drop on demand inkjet technologies.

[(02+02) + 03 + 03]

4A. Explain the procedure for electromechanical and laser engraving of gravure cylinders.

4B. Explain the working of mechanical double sheet, early sheet and late sheet detectors used on sheet-fed offset press.

4C. Explain the procedure of making direct and capillary stencils for screen printing.

[04 + 03 + 03]

5A. i. Describe the working principles of internal and external image setters used for the reproduction of films.

ii. Explain the top and bottom gravure printers with neat sketches and mention their applications.

5B. i. Explain the methods of thermal transfer printing.

ii. Explain the components and working principle of a photocopying machine.

5C. The plate and blanket cylinders' undercut on a bearer-contact offset press are **0.020"** and **0.075"** respectively. Plate and blanket thicknesses are **0.015"** and **0.065"** respectively. Packing thicknesses of plate and blanket are **0.01"** and **0.009"** respectively. Calculate the squeeze at the cylinder nip.

[(02+02) + (02+02) + 02]