

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

I SEMESTER M.TECH. (PRINTING AND MEDIA TECHNOLOGY)

END SEMESTER EXAMINATIONS, NOV 2017

SUBJECT: ADVANCES IN PRINTING TECHNOLOGY [PME 5102]

REVISED CREDIT SYSTEM (16/11/2017)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- Missing data may be suitable assumed.
- **1A.** How does digital offset printing sheets differ from conventional printing sheets?
- **1B.** What is the importance of Blanket in an offset printing process? What are the effects of smashing the blanket?
- **1C.** With a neat diagram explain the roller system in an offset and digital offset printing press.

[03+03+04]

- **2A.** Explain the preparation of dampening solution assuming that the tank capacity is 130 liters. Brief about each of the constituent.
- 2B. What do you understand by shore hardness? How does it affect print quality?
- **2C.** With a neat diagram, explain the preparation of paper in a Fourdrinier machine.

[03+03+04]

- **3A.** List 6 offset printing problems, their causes and remedies.
- **3B.** Describe in detail the adhesive systems used for screen printed textiles.
- **3C. i.** What should be the BCM of anilox roll to achieve the dry ink film of 7.4 microns, if ink contains 25% solids and ink transfer is 80%.
 - ii. Calculate the theoretical wet ink film thickness deposited by the screen mesh of count 350TPI, thread diameter 34 microns and mesh thickness of 66 microns.

[03 + 03 + (02+02)]

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- **4A.** Explain the importance of 3Ts for gravure dryers.
- **4B. i.** Explain the registration of web using linear compensators on flexo and gravure presses.
 - **ii.** Describe the working of servo driven flexographic presses and its added advantages over gear driven presses,
- **4C.** With a neat block diagram, explain the prepress workflow of publication gravure.

[02+04+04]

- **5A.** Distinguish between surface mount technology and hole mounting technology used for printed PCBs.
- **5B.** How does Electro Static Assist help in achieving quality print on substrate with surface roughness? What are the basic systems available? Explain.
- **5C.** What are expandable shafts? How does these shafts reduce difficulties in handling the web? Explain with some illustrations.

[02+04+04]