Reg. No.										

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

I SEMESTER M.TECH. (PRINTING AND MEDIA TECHNOLOGY)
END SEMESTER EXAMINATIONS, NOV 2019
SUBJECT: ADVANCES IN PRINT MEDIA [PMT 5151]
REVISED CREDIT SYSTEM
(15/11/2019)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A. Describe the two types of hickeys that may appear on the offset printed paper. How do they form? How do you eliminate hickeys through inking and dampening units?

1B. What is snow flaking in gravure printing? How does it appear? What is the solution to eliminate it and improve productivity? Describe the different ways of applying such solution.

1C. i. What are composite squeegees? Explain how do they improve productivity under certain situations.

ii. How do you determine the optimum stencil exposure time using exposure meter?

[04 + 03 + 03]

2A. Describe the type of materials, preparation and mounting technique used for sleeves as flexo image carriers.

2B. Categorise the variables that are essential for controlling print quality in screen printing and explain the different variables that fall in each category

2C. If an anilox roll of 8 BCM/in^2 volume with the ink transfer of 80% to plate is used and the printing ink contains 30 % solids, calculate the ink film thickness transferred to the paper surface.

[04 + 03 + 03]

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3A. Describe the Ink transfer by retroactive disruptive effects, from the ink form roller to the plate cylinder, from plate to the blacket cylinder and from blanket to substrate.

3B. Describe about the different types of drop-on-demand inkjet technologies.

3C. How do you select right anilox roller for printing a good quality image on a specific substrate? Explain with an example.

[04 + 03 + 03]

4A. How do you set the pressure between the following using visual stripe method:

i. Form roller and oscillator roller

ii. Form roller and offset plate

4B. Explain the electromechanical gravure cylinder engraving method and the controlling parameters.

4C. Describe any three controlling parameters and their operations on a remote control console of a sheetfed offset press.

[04 + 03 + 03]

5A. What are the closed loop tension control systems used on flexo presses? Explain their construction and the way in which each maintain web tension.

5B. Explain the working of a digital offset press based on the principle of electrophotography with neat diagram.

5C. If a gravure cylinder of 7.5" in diameter and 55" in length, has cell width of 235μ when engraved at 45°, calculate the horizontal and vertical screen rulings of the cylinder. If the same cylinder is engraved at 40°, what is the screen ruling of the cylinder and the total time taken for engraving? Consider Horizontal screen factor for 40° cell as 0.916, the cell wall at the maximum density as 14μ and average engraving speed as 4500 cells per sec.

[04 + 03 + 03]