Reg. No.										

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

I SEMESTER M.TECH (PRINTING AND MEDIA TECHNOLOGY)

END SEMESTER EXAMINATION, NOV/DEC 2015

SUBJECT: PRINTING TECHNOLOGY [PME 501]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ANY FIVE FULL** questions.
- Missing data may be suitable assumed.

1A. How does anilox roller help in achieving the desired ink film thickness in flexographic printing? What is the relation between plate image ruling and anilox screen ruling? Explain. **04**

1B. Explain the features and applications of the following mesh used in screen printing: **03**

i. Carbonized mesh **ii.** Calendered mesh **iii.** Metalized polyester mesh

1C. With a neat sketch explain the structure and imaging of waterless offset plate. **03**

2A. Explain with neat diagrams the preparation of the roll and the sequence of operations in flying splice. **04**

2B. Explain the chambered doctor blade flexo inking system and list its 2 advantages.

2C. With a neat diagram explain the steps involved in iconography printing process **03**

3A. Write an expression for degree of irregularity in offset inking system. With a neat sketch explain the offset inking unit with film thickness smoothing system. **04**

3B. With a flow diagram, explain in detail the completely digitized workflow of pre-press department. **03**

3C. With a neat diagram, explain the publication gravure press for printing 8 page newspaper using 2 webs, with 4x4 + 1x1 printing. **03**

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4A.	How does ESA help achieving better print results in gravure printing? Explain with the different designs of ESA impression roller.	**04**
4B.	Explain the special squeegee techniques used for overcoming certain print problems in screen printing.	**03**
4C.	With a neat sketch explain photoelectric type early and late sheet detectors used in sheet fed offset printing press.	**03**
5A.	With a neat diagram explain binary deflection continuous inkjet process.	**04**
5B.	With neat diagram, explain the components of dancer roll system and how it automatically controls the web tension.	**03**
5C.	Explain the working principle of cylinder bed and container screen printing machine with neat diagrams.	**03**
6A.	With neat sketch explain the sequence of operation in electrophotography.	**04**
6B.	The gravure cell width is 215μ when engraved at 45°. Horizontal and vertical screen factors for 40° are 0.916 and 1.091 respectively. The cell wall at the maximum density is 14μ. Calculate the screen rulings 40° and 50° cells. If the gravure cylinder is of 12" in diameter and 72" in length compare the total time taken for engraving the cylinder for both screen rulings? The average engraving speed is 4300 cells per hour.	**03**
6C.	Explain hybrid printing systems combining conventional and non-impact printing technologies.	**03**