Reg. No.

MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
A Constituent Institution of Manipal University

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

END SEMESTER MAKE-UP EXAMINATIONS, DEC/JAN 2016-17

SUBJECT: DIGITAL AND SECURITY PRINTING [PMT 3102]

REVISED CREDIT SYSTEM
(29/12/2016)

Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:

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

1A. State and explain different types of proofs.

1B. Explain the following:

    i.   Creating input profile for Scanner and Camera.

    ii.   Calibration of Image setter and Printing press.

1C. With a neat flow chart, explain the workflow integration in a printing press.

[04 + (02+02) + 02]

2A. Explain the following security features with respect to their printing, design and protection against photocopying.

    i.   Logo-Dot   ii. Micro text Printing

    iii.   Metameric ink pairs   iv. IR barcode printing inks

2B. Explain the following with neat diagram:

    i.   Ionographic color printing process with intermediate drum.

    ii.   Digimaster 9110

2C. What is preflighting? What does it do? What should be included in the preflight checklist?

[04 + (02+02) + 02]

3A. Explain the following with neat diagrams/illustrations:

    i.   Processing of Thermal sensitive aluminium plates.

    ii.   Hybridization for printing label for a cosmetic bottle with text, high quality graphics, the brand name with a relief and a gold foil finishing.

3B. What are the reasons for making a proof? Explain the requirements of a proofing system.

3C. How Variable data printing is an integral part of security printing process? Explain.

[(02+03) + 03 + 02]

4A. Explain the following:

    i.   Resolution   ii. Bit depth

    iii.   Compression   iv. Document types

4B. Differentiate between:

    i.   Penetrating ink and aqua bleed inks.

    ii.   Vector and raster image file formats.

4C. Explain the postscript RIP in prepress workflow with the help of a neat flowchart.

[04 + (02+02) + 02]

5A. Explain the following:

    i.   Guilloche security feature, its design, printing and security offered by it.

    ii.   Problems associated with soft proofing and requirements of its viewing conditions.

5B. Explain the following with neat diagrams:

    i.   Gravure cylinder production through ablation.

    ii.   Piezoelectric inkjet process.

    iii.   Thermal sublimation process.

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