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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

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

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: DIGITAL AND SECURITY PRINTING [PMT 3102]

**REVISED CREDIT SYSTEM
(26/11/2016)**

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

1A. With neat sketches, explain the four different types of 'singlepass' multicolor printing systems under computer to print technology.

1B. Explain the following:

- i. 4 major advantages and disadvantages of digital printing.
- ii. Scatter and Progressive proofs.

1C. Explain the procedure of producing digital proofs using color management.

[04 + (02+02) + 02]

2A. Explain the scanning factors affecting the image quality.

2B. With a neat diagram, explain the working of 74Karat digital printing machine.

2C. How does Intaglio printed text offers security features to the product? Explain.

[04 + 04 + 02]

3A. With a neat flow chart, explain the various stages of proofing in production cycle. Explain their importance at each stage.

3B. Explain the screening techniques in digital printing.

3C. Differentiate between Coin reactive ink and thermochromic inks by considering their printing process and working principles.


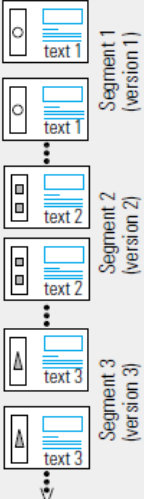

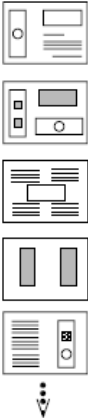
[05 + 03 + 02]

4A. Explain the following security features/items:

- i. Planchettes
- ii. Security fibers
- iii. Watermarks
- iv. Security threads

4B. Explain the aspects that distinguishes digital printing process form conventional printing.

4C. Explain the possible hybridization to achieve the following output shown in figure below:

	Identical content of the entire print run (fixed image)	Splitting the entire print run into segments (versions) of the same content	Page contents partly personalized (personalizing, individualizing)	Complete pages with different content (variable image)
Print job				
Run length:	e.g., 5000	Total: 10 000, for example, with 10 segments of 1000	"1"	"1" (e.g., "Book on Demand")

[04 + 04 + 02]

5A. Differentiate between:

- i. Fake water mark and Dandy roll water mark.
- ii. Photopolymer plates for offset and flexo printing process.

5B. Explain the following:

- i. Typical failure modes for inkjet.
- ii. Inks for inkjet system.

5C. With a neat flowchart, explain the color management architecture using color look-up table.

[(02+02) + 03 + 03]