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Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



V SEMESTER B.TECH (PRINT AND MEDIA TECHNOLOGY)

MAKE-UP EXAMINATIONS, DEC 2015 – JAN 2016

SUBJECT: DIGITAL AND SECURITY PRINTING [PME 317]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** With a neat flow chart, explain the different proofing stages in a production cycle. **04**
- 1B.** With neat diagrams, explain the following printing systems: **06**
- a. Direct or without intermediate carrier b. Via intermediate carrier
c. Collecting on intermediate carrier d. Collecting on image carrier
- 2A.** With neat diagrams explain four type of printing systems based on Ionography. **06**
- 2B.** Explain the steps involved in calibrating the following: **04**
- a. Imagesetter b. Printing press c. Monitor d. Proofing device
- 3A.** Explain the following in detail: **04**
- a. Pixel dimensions b. Resolution
c. Dynamic Range d. Bit depth
- 3B.** What is preflighting? What problems arise in the absence of preflighting? What are the tools available to overcome these problems? Explain the solutions for these problems. **04**
- 3C.** Differentiate between pre-RIP and post-RIP with neat flow chart. **02**
- 4A.** Explain the following with neat diagrams: **04**
- a. Gravure cylinder production through ablation and DICOweb gravure printing press.
b. Platemaking with Magnetography and toner application.

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- 4B.** Explain the following hybridization process with neat diagrams: **04**
- a. Hybrid printing system for label printing; combining the printing technologies of flexography, offset, and screen, as well as letterpress (with heated plate) for hot-foil stamping/embossing.
 - b. Digital hybrid printing system using the combination of computer to press/direct imaging technology for multicolour printing (waterless offset) and computer to print imprinting system (NIP technology).
- 4C.** Explain workflow integration. **02**
- 5A.** Explain the imaging and developing of following CtP plates by digital imaging: **04**
- a. Aluminium plates with Silver Halide coatings
 - b. Thermally ablative imaging (Cleaning after imaging and by suction)
 - c. Photopolymer plates for flexo
 - d. Polyester based plate by diffusion transfer
- 5B.** Explain the following with respect to Inkjet system: **04**
- a. Simplicity over conventional systems
 - b. Advantages over conventional systems
 - c. Typical failure modes
 - d. Inks
- 5C.** Explain 8 dis-advantages of digital printing. **02**
- 6A.** With neat diagrams explain the following: **04**
- a. Truepress 544
 - b. Direct imaging process and printing unit for DICOweb Litho
- 6B.** Explain the following print deterioration forces with test methodologies in detail: **04**
- a. Heat b. Light c. Pollution d. Humidity extremes
- 6C.** With a neat sketch, explain the Gaussian Intensity profile and the process to overcome the same by steeper edge with its profile. **02**