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Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



## VII SEMESTER B.TECH (PRINTING TECHNOLOGY) END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: UV TECHNOLOGY [PME 409]

## **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 neat diagrams, explain the process of ink drying on exposure to UV **04** radiation and Electron beam.
- **1B.** Explain the difference between the "Radical and Cationic" UV curing. **03**
- Explain the advantages of CIC press and Hybrid technology press in UV Flexo 03 printing.
- 2A. What are the factors to be considered before using UV inks in offset press? 04 Explain.
- 2B. What are the factors to be considered for temperature control in UV Gravure 03 printing? Explain.
- 2C. Explain in detail the different types of screen frames and fabric types used in 03 UV Screen printing process.
- **3A.** Explain the roles and characteristics of UV Ink ingredients. With a neat **04** diagram, explain how "Prime IT" UV technology works.
- **3B.** Explain in detail the below mentioned equipment's utilized in UV offset press. **03** 
  - a) Chambered doctor blade and
  - b) Twin drying units
- 3C. Explain the factors to be considered for UV lamp control and quality assurance 03 in UV curing.

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03

- **4A.** Explain the factors which determine the higher economic efficiency in UV Flexo **04** printing.
- 4B. What are the prerequisites for converting Offset printing press to UV operation? 03Explain in detail.
- **4C.** Explain the working and its advantages of UV-curing ink systems for Piezo- **03** electric inkjet printing.
- 5A. Explain two different drying mechanisms of printing inks. Write the functions of 04 a photoinitiator and 4 problems caused due to insufficient UV curing.
- **5B.** Explain in detail the advantages of UV coating in publication gravure printing. **03**
- **5C.** Explain in detail the different types of emulsions used in UV Screen printing. **03**
- 6A. What are the current challenges/ conditions faced in the UV inkjet technology? 04 Explain in detail.
- 6B. Explain the requirements of
  - a) Treatment for Substrates used in UV Press
  - b) Ink Mist Extraction in UV press
  - c) Ink conditioning in UV press
- 6C. Write the factors influencing the UV drying process and explain the advantages 03 of using cooling systems on UV press.