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Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



III SEMESTER B.TECH (PRINT AND MEDIA TECHNOLOGY)

MAKE-UP EXAMINATIONS, DEC 2015 – JAN 2016

SUBJECT: PRINTING MATERIAL SCIENCE I (PMT 2104)

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** With neat diagrams, explain blade coating and cast coating. **3**
- 1B.** Explain the properties and applications of aluminium as image carrier. **3**
- 1C.** i) Discuss the light fastness and refractive index properties of pigments. **2+2**
ii) Compare softwood and hardwood.
- 2A.** Explain the features of the following additives: **3**
i) Anti-settling agents ii) Gelling agents iii) Anti-foaming agents
- 2B.** With diagrams, explain screening and washing techniques used in paper recycling process. **3**
- 2C.** i) What are the components of a developer solution used for processing photographic films? Explain the function of each with one example. **2+2**
ii) Explain various steps of manufacturing paper by Tsai Lun.
- 3A.** With neat diagram, explain the process of manufacturing varnish for paste inks. **3**
- 3B.** Explain how substrate and type of printing press affects ink formulation. **3**
- 3C.** i) With neat sketch, explain the construction of an offset blanket. **2+2**
ii) Explain the features of sizing agents and coloring agents used as raw materials in papermaking.

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- 4A.** Explain sulphite process of pulping with 2 advantages and disadvantages each. **3**
- 4B.** Explain the following modified natural resins; **3**
- i) Cellulosics ii) Cyclized rubber iii) Rosins
- 4C.** i) Explain the function and features of ingredients used in dampening solution. **2+2**
- ii) Compare the working of John mill and STS mill.
- 5A.** Compare the manufacturing process and properties of carbon blacks. **3**
- 5B.** With neat diagram, explain the working of shot mill with 2 advantages and disadvantages each. **3**
- 5C.** i) Explain the stages of chipping and washing in pulping process. **2+2**
- ii) Explain the features of rapid-access film and duplicating film.