

MANIPAL INSTITUTE OF TECHNOLOGY

(*A constituent unit of MAHE, Manipal*)

IV SEMESTER B.TECH. (PRINT & MEDIA TECHNOLOGY)

END SEMESTER EXAMINATIONS, APRIL/MAY 2019

SUBJECT: PRINTING MATERIAL SCIENCE II [PMT 2202]

REVISED CREDIT SYSTEM

Time: 3 Hours

29-04-2019

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- ✤ Missing data may be suitably assumed.
- 1A. Discuss the features of the following papers;
 - i) Synthetic papers ii) Cover paper iii) Bristol paper
- **1B.** Explain the importance and testing procedures for following ink properties;
 - i) Opacity ii) Color strength
- **1C.** i) Explain the procedure for testing pH of paper.
 - ii) Explain how dry indicator and ink flotation methods are used to find water resistance of a paper.

[03+03+04]

- **2A.** Explain the manufacturing process, properties and applications of Aluminium foil.
- 2B. Explain the importance of viscosity of ink. Discuss the working principle of
 - i) Cup viscometer ii) Rotational viscometer
- 2C. i) Explain the importance of filler composition in the paper and its testing procedure.
 - ii) Explain the importance and testing procedure for gloss of paper.

[03 + 03 + (02+02)]

- **3A.** i) Define length of an ink. Explain how to test it.
 - ii) Why heat resistance is required for printed ink film? Explain the 2 methods used to find it.
- **3B.** Explain the working of two types of heat transfer inks printed by screen printing.
- **3C.** Discuss the two testing methods to find blister resistance of coated papers and discuss the four factors influencing it.

[(1.5+1.5) + 03 + 04]

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- **4A.** Explain the three tests used to find abrasion resistance of ink on a printed substrate.
- **4B.** i) Explain the two types of gravure inks.
 - ii) How many reams of paper of Imperial size are required to prepare 25,500 copies of folder of size 15 cm × 24 cm, each containing 6 pages?
- **4C.** i) Explain the two procedures used to find surface strength of paper.
 - ii) Discuss the features of straw board and chip board.

[03 + (02+01) + (02+02)]

- **5A.** Explain heat-set and quick-set drying mechanisms of ink.
- **5B.** i) Explain the features of magnetic and non-magnetic powder toners.
 - ii) A ream of paper in royal size weighs 75 lbs. Find out the weight in kg of the same paper in crown size.
- **5C.** i) Compare plasma and corona treatment.
 - ii) With neat diagram, explain the process of wet lamination.

[03+(02+01)+(02+02)]