



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

END SEMESTER EXAMINATIONS, APR/MAY 2017

SUBJECT: PRINTING MATERIAL SCIENCE II [PMT 2202]

REVISED CREDIT SYSTEM

(24/04/2017)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** Explain the 3 tests used to determine the time taken by liquids to partially or completely penetrate the paper.
- 1B.** What are the consequences of improper pigment grinding in print quality of various printing processes? Also, explain the testing procedure to determine pigment's fineness of grind.
- 1C.** Explain oxidation polymerization and UV ink drying mechanisms.

[03 + 03 + 04]

- 2A.** What is the importance of ink adhesion to a substrate? Explain the 4 methods used to determine the same.
- 2B.** Explain the features of collodion inks and 2 types of gravure inks based on their application.
- 2C.**
- i)** Explain how to determine hygro-expansivity of a paper.
 - ii)** How can you check the stiffness of a paper? Explain.

[03 + 03 + 04]

- 3A.** Explain the features of 6 types of utility papers.
- 3B.** What is the difference between tin plate and tin-free steel? Explain the 2 methods of manufacturing tin plate.
- 3C.** Explain the procedure for testing the following ink properties:
- i)** Color strength
 - ii)** Opacity

[03 + 03 + 04]

- 4A.** Explain the procedures for testing moisture absorbency of a paper by cobb size test and water vapour transmission rate of a packaging material.
- 4B.** Explain the features of following screen printing inks;
i) Glitter inks ii) Puff inks iii) Discharge inks
- 4C.** i) Explain the features needed by the papers meant for web offset printing process.
ii) What are the features of dry lamination? With neat diagram, explain the process.

[03 + 03 + 04]

- 5A.** What is the importance of tensile strength in papers? Explain its testing procedure.
- 5B.** Explain the features of single-component and two-component powder toners. What do you mean by length of an ink and how to you check it?
- 5C.** i) What is the weight of 1000 sheets of 90 gsm white matt coated paper, 63cmx88cm?
ii) Find out the weight of reel of paper having width, outer diameter and inner diameters as 60cm, 120cm and 20 cm respectively. The substance of the paper is 90 and its caliper is 1/12mm?

[03 + 03 + 04]