



Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



IV SEMESTER B.TECH (PRINT AND MEDIA TECHNOLOGY)

MAKEUP EXAMINATIONS, JUNE - JULY 2016

SUBJECT: PRINTING MATERIAL SCIENCE II [PMT 2202]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** i. Explain the manufacturing, properties and uses of aluminium foil for packaging. **02**
+
ii. List 4 advantages and 4 disadvantages of using the paper boards for food packaging. **02**
- 1B.** List the factors that improve the surface strength of paper. Explain the different methods of measuring the paper's surface strength. **03**
- 1C.** Identify the printing process and explain the following ink drying mechanisms: **03**
- i. Oxidation-polymerization
 - ii. Heat-set drying
- 2A.** i. Compare the Corona and Plasma treatment for plastic materials. **02**
+
ii. Explain the factors to be considered to check the suitability of glass material for particular applications. **02**
- 2B.** Define color strength, opacity and gloss of ink. Explain the procedure for testing these properties. **04**
- 2C.** i. Explain the test to determine the filler content of paper. **01**
+
ii. How does Moisture content and Relative humidity influence runnability of paper? Explain. **01**

3A.	i.	A ream of paper in Imperial size weighs 100 lbs . Find out the weight in kilograms for the same paper in small royal size .	02
	ii.	Explain the problem of “Screening” and “Foaming” of gravure inks. Mention their causes and prevention methods.	02
3B.		Explain the importance of abrasion resistance of ink and the testing procedure using different instruments.	04
3C.		Justify the following statements:	01
	i.	Less the paper is refined, greater will be its dimensional stability.	+
	ii.	Absorbency of substrate influences ink drying rate.	01
4A.		Explain the importance of following ink properties with their testing procedures:	
	i.	Wet ink film thickness	04
	ii.	Ink emulsification	
4B.	i.	Explain the plastisol screen printing inks with 2 advantages and 2 disadvantages.	02
	ii.	Explain the different types of letterpress inks.	02
4C.		Explain the features of chemical transfer paper and synthetic papers	02
5A.	i.	Explain in detail the single-component and two-component liquid toners used in digital printing.	03
	ii.	Explain the following ink properties with methods for determining their properties and importance.	+
	a.	Ink misting	02
	b.	Flash point	
5B.		Explain the procedure for following:	01
	i.	GATF test for determining the cleanliness of paper.	+
	ii.	EBA test for measuring the amount of dirt on paper surface.	01
5C.		What is waffling of paper? What are its causes? Explain the ways to prevent waffling.	03