



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

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: PRINTING MATERIAL SCIENCE I [PMT 2104]

REVISED CREDIT SYSTEM
(06/12/2016)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

1A. What is the composition of black pigment? Compare the features of carbon blacks.

1B. Describe the importance and features of the following in paper manufacturing:

- i) Chipping ii) Fillers ii) Twin-wire machine

1C. Explain 3 types of photographic films based on the type of film base used.

[(01+03) + 03 + 03]

2A. Compare the following stages during paper manufacturing:

- i) Lignin removal & lignin bleaching approach of bleaching agents.
ii) Beating and refining stages.

2B. i) Explain the importance of the following in selection of colorant for printing ink manufacturing:

- a) Transparency of ink b) Properties of ink film
ii) With diagram, explain the construction and working of ball mill.

2C. Explain the features of dispersants and collectors used in paper recycling.

[04 + (02+02) + 02]

3A. Describe the features of the following components of printing ink:

- i) Heat-bodied Linseed oil ii) Cellulosics iii) Ketones

3B. With neat diagram, explain various parts of Forming section of Fourdrinier paper making machine.

3C. i) Explain the properties of Chromium as an image carrier material.

- ii) Describe various water purification methods.

[03 + 03 + (02+02)]

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- 4A.** Explain various forms of pigments used in ink manufacturing.
- 4B.** Explain the manufacturing process of liquid ink.
- 4C.** Explain various purposes of paper coating.

[05 + 03 + 02]

- 5A.** Explain various stages of De-inking process of printing papers in Recycling
- 5B.** Explain the following additives used in printing inks:
 - i) Waxes ii) Anti-foaming and defoaming agents iii) Driers
- 5C.**
 - i) With diagram, explain stone ground-wood pulping.
 - ii) Describe the construction of an offset blanket.

[03 + 03 + (02+02)]