Reg. No. [ ][ ][ ][ ][ ][ ][ ][ ][ ]

MANIPAL INSTITUTE OF TECHNOLOGY
(A Constituent Institution of Manipal University)

Department of Printing & Media Engineering
Third Semester BE Degree (Printing Technology) MAKEUP Examination
JULY 2008 (Revised Credit System)
PAPER AND INK (PME 205)

Time: 3 Hrs.   **Max. Marks: 50**

Each Main question carries 10 marks. Answer any 5 full Questions.

Instructions to Candidates:
   (i) Draw neat sketch / figures where ever necessary.
   (ii) Answer to the point and clearly.
   (iii)Assume missing data, and mention the same.

1a. Discuss about the technical developments that took place in the paper making industry

1b. What is length w.r.t printing inks? How can you measure this property of ink?

1c. What is the principle of super calendaring papers? How is it different from the calendaring?

1d. Explain the importance of Driers and Antiskinning agents in printing inks.

[03] + [03] + [02] + [02]

2a. What are the different sources of fibers for paper recycling? List out their properties and applications.

2b. Why is blister resistance an important property for coated papers? Explain the oven and transporter test used to measure this property?

2c. Explain the multi-stage bleaching process in paper making.

2d. Why is debarking and chipping important during paper making? How is it achieved?

[02] + [03] + [02] + [03]

3a. What is dimensional stability w.r.t papers? Why is it an important paper property? What are the factors during paper making that effect this property?

3b. How do you mill paste inks in a three-roll mill? What are the factors that influence the efficiency of this milling operation and how?

3c. Write a note on synthetic resins used in printing inks?

[04] + [04] + [02]

4a. What are the components that form the dry-end of the Fourdrinier machine? How does each of these components lend to paper making?

4b. What is ink tack? Explain the Stephan's equation of ink tack and its applicability in printing.

[05] + [05]

5a. Explain the principle and operation of ball mills.

5b. Why is two-sidedness an important paper property? How can you detect this property of a given paper?

5c. Explain the process of recovering the waste from a paper making mill?

[03] + [03] + [04]

6a. Explain the principle and operation of washing and screening in paper recycling.

6b. How are magnetic inks different from metallic inks? What are their specific applications?

6c. How is the process of blade coating different from that of air-knife coating? What are the properties they impart to paper and what are their specific applications?

[03] + [03] + [04]