B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

Printing Technology

Semester II

PH9166 –Physics for Printing Technology (Regulation 2008)

Time: 3 Hours   Answer ALL Questions   Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Define Surface tension

2. What is the principle of bubble pressure method?

3. What is the effect of temperature on viscosity?

4. Define coefficient of viscosity of liquid

5. Define magnetic Susceptibility.

6. What are the advantages of CD?

7. Define Photoluminescence

8. What are liquid crystals?

9. What are the functions of optical filters?

10. Mention about decoding by Fourier transforms.

Part – B (5 x 16 = 80 marks)

11. Describe and explain Jaeger's method of measuring the surface tension of a liquid. Discuss whether the results obtained in this method should be the same as that given by the capillary tube method.

12. (a) (i) Derive Stokes' formula for the viscosity of a small sphere falling through a viscous liquid (8).

(ii) Explain how this is utilized to determine the viscosity of liquid like castor oil and mention one more application of Stokes' formula. (8)

. (OR)

(b) (i) What is the basic physical principle of ink-jet printer? (3)

   (ii) Derive the formula for Poiseuille's method of measuring the velocity of liquids and indicate a method which could be employed to measure the viscosity of liquids at different temperatures. (13)

13. (a) Explain the principle, construction and reconstruction of a hologram with diagram.

(OR)

(b) Discuss optical data storage, phase change recording and magneto-optical data storage.

14. (a) (i) Explain the theory and working of LCD. (10)
   (ii) What are the different types and mention the advantages (6)

(OR)

(b) (i) Write a note on Photo-detectors.(5)
   (ii) Write a note on LED materials and how are LEDs constructed? (11)

15. (a) Explain the method of optical signal processing using incoherent light.

(OR)

(b) Explain the principle and working of an optical spatial light modulator.