17/9/13

B.E/B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2013

SECOND SEMESTER

PRINTING TECHNOLOGY BRANCH

PH 9166 – PHYSICS FOR PRINTING TECHNOLOGY

(REGULATIONS 2008)

Time : Three hours **Maximum : 100 marks**

(Answer **ALL** questions)

PART – A **(10 X 2 = 20 marks)**

1. What is meant by angle of contact?
2. What are surfactants? Give examples.
3. Differentiate between Newtonian and non-Newtonian fluids.
4. Define Critical velocity. What are the factors on which it depends?
5. List the parameters on which magnetic recording depends.
6. What is photo refractive storage?
7. Define luminescence and list its types.
8. What is a photo detector? Give examples.
9. What are Spatial light modulators?
10. How is incoherent image converted to coherent image?

PART – B **(5X16 = 80 marks)**

11. (a).(i) Explain the construction and working of a Liquid Crystal display. (12)

(ii) Write a note on organic LED (4)

12. (a) Explain briefly the determination of surface tension by Jaeger's method. (12)

Calculate the work done in spraying a spherical drop of water of 10^{-3} m radius into million droplets all of the same size. (4)

(OR)

(b) Derive the conditions for the shape of the liquid surface in a capillary tube. What is the effect of temperature on surface tension. (12+4)

13. (a) Define streamlined and turbulent flow. Derive Poiseuille's formula for the flow of liquid through a capillary tube. (4+12)

(OR)

(b) Explain in detail the principle and working of an inkjet printer.

14. (a) With a neat sketch explain the construction and reconstruction of a hologram.

(OR)

(b) (i) Write a note on optical data storage (8)

(ii) Explain the Hi-tech involved in system development (8)

15. (a) Explain briefly the Fourier transforming properties of lenses

(OR)

(b) (i) What are Optical filters? Explain the different types in detail. (8)

(ii) Explain in detail Abbe- Porter experiment. (8)