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B.E / B.Tech (Full Time) DEGREE ARREAR EXAMINATIONS, APRIL/MAY 2014

Branch: PRINTING

Semester - II

PH 183 / PH 9166 – PHYSICS FOR PRINTING TECHNOLOGY

(Regulations 2004/2008)

Time: 3 Hours

Max. Marks: 100

Answer ALL questions

PART A — (10 x 2 = 20 Marks)

1. Define angle of contact and interfacial tension.
2. 100 drops of water falling down a tube of external diameter 3.5 mm are collected under an oil of specific gravity 0.8. Calculate the interfacial tension between water and oil if the water collected weighs 12.35 gm.
3. Define streamline flow of liquid.
4. Write the expression for terminal velocity.
5. What is meant by magnetization?
6. What is the principle of phase change recording?
7. What is electroluminescence?
8. How barcode can be generated?
9. Define Fourier optics.
10. How a LCD acts as a light valve?

PART B — (5 x 16 = 80 Marks)

11. Discuss about Fourier transforming properties of lenses and the Abbe-Porter Experiment.
12. (a) Describe Jaegar's method of studying the variation of surface tension of water with temperature.

OR

(b) Describe the experimental study of the variation of surface tension with temperature and the method of drop-weight to determine the surface tension.

13. (a) Derive Poiseuille's formula along with corrections for the flow of a liquid through a capillary tube.

OR

(b) (i) Describe the Stoke's method for determining the coefficient of viscosity of a viscous fluid (8)

(ii) Describe the experiment for determining coefficient of viscosity of a liquid using variable pressure head method (8)

14. (a) (i) What is meant by holography? (4)

(ii) Explain with neat diagrams the construction and working of holographic data storage unit (12).

OR

(b) Explain the magneto-optical method of recording data.

15. (a) Explain the theory and working of LCD. What are the different types? Explain the advantages (8+4+4)

OR

(b) Explain the theory and working of photo-detector and photodiode (8+8)
