Reg.No.:								

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 3001

B.E. / B.Tech. DEGREE SUPPLEMENTARY EXAMINATIONS – FEB. / MAR. 2020
First Semester
Computer Science and Engineering
UI5PH101 – PHYSICS – I
(Common to Electrical and Electronics Engineering, Electronics and Communication Engineering, Information Technology & Biotechnology)
(Regulation 2015)

Time : Three Hours Maximum : 100 Marks

Answer ALL the questions

PART – A

(10 x 2 = 20 Marks)

1. What are the necessary conditions for Interference of light?
2. What is Total Internal Reflection of light?
3. Define Resolving power.
4. Distinguish between plane polarized light and elliptically polarized light.
5. State Bernoulli's theorem in fluid dynamics.
6. What is meant by terminal velocity of a body in a high viscous liquid?
7. What is heat conduction in solid?
8. What are the applications of thermography?
9. List the lattice parameters to construct a unit cell with diagram.
10. What are Miller indices in crystal structure?

PART – B

(5 x 16 = 80 Marks)

11. a) Deduce an expression for an air wedge to find the thickness of thin sheet of paper and hence explain an experimental to find the thickness of paper using air wedge experiment. (8+8)

(OR)

b) Deduce and show that Numerical aperture depends on core and cladding refractive indices of a fiber in optical communication.

12. a) Explain in detail the production and analysis of circularly polarized light and linearly polarized light.

(OR)

b) Discuss in detail a Fraunhofer diffraction of a double slit?

13. a) Explain the Bernoulli's equation of stream line flow of liquid and also list its applications.

(OR)

b) Illustrate the principle and working of Ostwald's viscometer with neat diagram.

14. a) Define thermal conductivity of a solid? Drive the equation for thermal conductivity of a bad conductor.

(OR)

b) Deduce Vanderwaals's equation of states with necessary conditions.

15. a) For Face Centered Cube determine
   i. Coordination number
   ii. Atomic radius
   iii. Packing factor with neat diagram.

(OR)

b) What are Miller indices? Show that for a simple cubic structure the distance between two successive planes (hkl) is given by $d = \sqrt{h^2 + k^2 + l^2}$.
