15/05/19

Roll No. | | | | | | | | | | |

B.E (FT) END SEMESTER EXAMINATIONS, April / May 2019
Computer Science and Engineering
First Semester

PH 6151 – ENGINEERING PHYSICS

(Regulation 2018 - RUSA)

Time: 3 hours Max. Marks : 100

(Answer ALL questions)

PART – A (10 x 2 = 20 marks)

1. List any four factors that affect elasticity of a material.
2. Define Simple Harmonic Motion.
3. What is noise? Give an example.
4. Why does a glass bottle break when you pour hot water in it?
5. Define Diffraction. Give an example.
6. For a semiconductor laser, the bandgap is 0.9 eV. What is the wavelength of light emitted from it?
7. What is Total Internal Reflection?
8. What is a debroglie wave?
9. State Bragg's law.
10. What is epitaxy?

PART –B (8 x 8 = 64 marks)
(Answer any 8 questions)

11. State Hooks law of elasticity. Draw stress-strain diagram and discuss the behavior of a ductile material under loading
12. Describe a method to find moment of inertia of a disc using torsion pendulum.
13. Explain how ultrasonic waves can be produced by piezo electric method.
14. What is acoustic grating? Explain how it can be used to measure the velocity of ultrasonic waves in liquids.
15. With neat diagram, derive an expression for thermal conductivity through a compound media connected in series.

16. Discuss using relevant diagrams about the static part in Forbe's method
17. Explain the working of Airwedge with necessary diagram to find the thickness of a thin wire.
18. Explain the theory behind anti-reflection coating.
19. Write short notes on homo-junction and hetero-junction lasers (4+4)
20. Derive the time independent Schrödinger wave equation.
21. Find the expression for acceptance angle of a fiber optic cable.
22. Sketch and explain the Fermi-Dirac statistical distribution with respect to energy at 0K and above (4+4)

PART –C (2 x 8 = 16 marks)

23. Derive Einsteins coefficients and write their significance.
24. What is coordination number? Find the packing factor of a FCC lattice with neat diagrams.