Reg. No. : | | | | | | | | | | |

Question Paper Code: 41003

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

First Semester

Civil Engineering

14UPH103 - ENGINEERING PHYSICS

(Common to ALL Branches)

(Regulation 2014)

Duration: 1:45 hour Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. Mention any two merits and demerits of Piezo electric oscillator.
2. Ultrasound cannot be produced by loudspeakers. Why?
3. The wavelength of light emitted by InP laser is 1.50 μm. What is its band gap in eV?
4. Define optical pumping.
5. The refractive index of core and cladding are 1.60 and 1.50 respectively. Calculate the critical angle at core-cladding interface.
6. What is splicing? Mention its types.
7. State Planck's hypothesis on black body radiation.
8. What is meant by degenerate and non-degenerate states?
9. Define space lattice and lattice points.
10. Mention any two differences between edge and screw dislocation.
11. What is meant by splicing in fiber optics?
12. What is Compton effect? Write an expression for the Compton wavelength.
13. What is meant by degenerate and non-degenerate states?

14. Name the seven crystal systems.

15. What are Frenkel and Schottky imperfections?

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. What is inverse piezoelectric effect? Describe the construction and working of a piezoelectric generator to produce ultrasonic sound waves (10)

17. Derive an expression for Einstein's coefficients A & B. (10)

18. Explain the double crucible technique of fibre drawing. (10)

19. Deduce an expression for Compton wavelength. . (10)

20. Deduce the atomic packing factor of FCC crystal with neat diagram. (10)