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

Question Paper Code: 41003

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

First Semester

Civil Engineering

14UPH103 – ENGINEERING PHYSICS

(Common to ALL branches)

(Regulation 2014)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Ultra sonics are sound waves having frequency.
   (a) Less than 20 Hz (b) Greater than 20000 Hz
   (c) Between 20 Hz and 20000 Hz (d) Greater than 20 Hz

2. Two dimensional scanning method is also known as
   (a) A- scan (b) B- scan (c) C- scan (d) none

3. The method of achieving population inversion in Nd:YAG laser is
   (a) Electrical discharge (b) Direct electrical conversion
   (c) Inelastic collision (d) Optical pumping

4. The principle of semi conductor laser is
   (a) Forward biased (b) Reverse biased
   (c) Energy of photons (d) None of these

5. The principle of propagation of light through optical fibre is
   (a) Total Internal Reflection (b) Refraction
   (c) Diffraction (d) Reflection

6. Joining of two fibres is called as
   (a) Welding (b) Soldering (c) Splicing (d) Sensor

7. $|\psi|^2$ is a measure of

(a) Probability density (b) wave function

(c) Velocity (d) Frequency

8. _____ is application of Schrodinger's wave equation

(a) Particle in a box (b) Scattering of electron by a photon

(c) Electron diffraction by a single slit (d) none of these

9. The co-ordination number of BCC structure is

(a) 6 (b) 8 (c) 12 (d) 16

10. The primitives are equal and interfacial angles are equal to 90^0 is called

(a) Cubic (b) mono clinic (c) Tri clinic (d) hexagonal

PART - C (5 x 16 = 80 Marks)

11. With neat circuit diagram, explain the production of ultrasonics by Piezo electric oscillator. (8)

12. Derive an expression for Einstein's coefficients A & B. (8)

13. Explain the principle and propagation of light through an optical fibre and obtain an expression for numerical aperture and acceptance angle. (8)

14. Deduce an expression for Compton wavelength. (8)

15. Define number of atoms in a unit cell, atomic radius. (8)