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Question Paper Code: 51003

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

First Semester

Civil Engineering

15UPH103- ENGINEERING PHYSICS

(Common to ALL branches)

(Regulation 2015)

Duration: 1:45 hours

Maximum: 50 Marks

Answer Any ten Questions

PART A - (10 x 2 = 20 Marks)

1. Define unit cell CO1- R
2. Mention the properties of ultrasonic waves CO2- R
3. Distinguish between laser source and ordinary light source. CO3 -R
4. What is Compton effect? CO4 -R
5. State Newton's law of cooling. CO5 -R
6. Define Coordination number. CO1- R
7. State Weber-Fechner law. CO2- R
8. Justify the term Stimulated emission CO3 -R
9. State Hooke's law. CO4 -R
10. Summarize the physical significance of wave function CO5 -R
11. Define unit cell. CO1- R
12. State Weber-Fechner's law. CO2- R
13. Define pumping CO3 -R
14. An electron is accelerated by a potential difference of 140 V. What is the wavelength of CO4 -R

15. State Newton's law of cooling.

CO5 -R

PART- B (3x 10= 30 Marks)

Answer any three of the following Questions

16. Prove that the packing factor for HCP and FCC are same CO1- U (10)
17. How do you measure the wavelength of ultrasonic waves in water by acoustic diffraction method? CO2- A (10)
18. Discuss the probability of stimulated absorption, spontaneous emission and stimulated emission, from the discussion deduce the expression for the probability constants. CO3- U (10)
19. Derive Schrödinger's time dependent and time independent wave equations. CO4- U (10)
20. Draw the stress-strain diagram for ductile material and explain the various parts of the diagram. CO5- U (10)