Question Bank

Course: **II year B.Sc. Computer Science**
SubCode: PHU1031
Subject: **Applied Physics-I**

Short Questions

1. Define‘Elasticity’
2. Define‘Strain’and‘stress’
3. StateHooke’slaw.
4. Write therelationbetweenstress&stainbyagraphandindicatetheimportantpoint.
5. Differentiate between elastic and plastic materials.
6. DefineYoung’smodulus,bulkmodulusandrigiditymodulus
7. Whatarethethreemoduliofelasticity?Givethe relationbetweenthem.
8. Definepoisson’sratio
9. What are the factors that will affect elasticity?
10. Whatisacantilever?
11. Define reverberation time.
12. Whatis Echelon effect?
13. Defineabsorptioncoefficientofamaterial.Giveitsunit.
14. Define Echo.
15. Whatis meant by reverberation?
16. Distinguishbetweenreverberationandecho.
17. Whatisultrasonics?
18. Listouttheproperties ofultrasonics.
19. Statepiezoelectriceffect.
20. Writedownfewindustrialapplicationsofultrasonics.
21. Statetheprincipleoflaser.
22. Writethecharacteristicsoflasers.
23. What is stimulated emission of radiation?
24. Distinguishspontaneousandstimulatedemission
25. Definepopulationinversion.

26. State the principle of laser action.
27. WhatareEinsteincoefficients?
28. What are the three modes of vibration of CO_2 laser?
29. List few applications of laser.
30. What is 3D profiling?
31. Whatistheprincipleusedinlightpropagationthroughfibers?
32. Whatistotalinternalreflection?
33. Defineacceptanceangle.
34. Definenumericalaperture.
35. Give the characteristic feature of optical fibers.
36. List out the types of optical fibers.
37. State the differences between single mode and multi mode fiber
38. State the differences between step index fiber and graded index fiber
39. Mention few applications of optical fiber in engineering fields.
40. Mention fewapplications ofoptical fiber in medical fields.
41. What is a semiconductor? List its types.
42. Write down the properties of semiconductors.
43. What are the most commonly used semiconductors?
44. What is PN junction?
45. What is a Zener diode?
46. Draw the circuit symbol of Zener diode.
47. Explain how Zener diode is used as a peak clipper.
48. What is FET? Write its types.
49. What is the importance of JFET?
50. Define JFET parameters and establish the relationship between them.

ReviewQuestions

1. Obtain the relation between three types of moduli
2. Obtain an expression to determine the young' modulus of a cantilever by non-uniform bending.
3. Discussthefactorsaffectingacousticsofbuilding&andhowthesecanberectified?
4. Whatis piezoelectriceffect?Explainwitha neatcircuit,thegeneratorofultra sonicusingapiezoelectricoscillator.
5. Explain the Einstein theory of stimulated emission of radiation.
6. Explain the construction, working and energy level diagram of CO_2 laser.
7. Explain the construction and working of Nd:YAG laser.
8. Obtain an expression for acceptance angle and Numerical aperture of an optical fiber.
9. Write an essay on different types of Optical fibers.
10. Explain the formation of potential barrier in PN junction.
11. Discuss the behaviour of PN junction under forward and reverse biasing.
12. What is a PN junction diode? Explain the V-I characteristics of PN junction diode.
13. What is a Zener diode? Explain the V-I characteristics of Zener diode.
14. Explain the operation of Zener diode as a Peak clipper.
15. Explain the static characteristics of JFET.