Q.22 State and explain Coulomb's law of electrostatics.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain Free, Forced and Resonant vibrations with examples.

Q.24 Explain various types of magnetic materials with examples.

Q.25 Write short notes on:

a) Gauss Law

b) Superposition of waves

c) Electromagnetic Induction

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1st Year. / Automation and Robotics

Subject : Applied Physics II

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 SHM stands for

a) Special Harmonic Motion

b) Simple Harmonic motion

c) Single Harmonic Motion

d) None of them

Q.2 Bouncing back of light from a polished surface is known as

a) Refraction b) Diffraction

c) Dispersion d) Reflection

Q.3 The total number of electric lines of force crossing a surface is called

a) Electric field Intensity

b) Electric potential

c) Electric Flux

d) Electric Power

Q.4 Which of the following is not a semiconductor

a) Silicon b) Gallium Arsenide

c) Copper d) Germanium

Q.5 Optical Fiber is based on the principle of

a) Reflection

b) Refraction

c) Total Internal Reflection

d) Polarization

Q.6 The audible range of sound is

a) 20 Hz to 200 Hz b) 2 Hz to 20 Hz

c) 2 Hz to 2000 Hz d) 20 Hz to 20000 Hz

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 SI unit of Power of lens is _____ (Watt /Diopter.)

Q.8 Electromagnetic wave can travel without _____ (Velocity/Medium)

Q.9 Write formula for Ohm's law.

Q.10 Name the type of magnetic material which contains residual magnetism.

Q.11 Write full form of LASER.

Q.12 Write relation between wave velocity and wavelength.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Write 4 differences in Longitudinal and transverse waves.

Q.14 State Ohm's law. Obtain expression for it.

Q.15 Define reflection. Write its laws.

Q.16 Define Semiconductor and its types.

Q.17 Define microscope. Write 2 applications of microscope.

Q.18 Define population inversion and Stimulated Emission.

Q.19 Write 4 applications of nanotechnology.

Q.20 Three resistors of resistance R_1,R_2 and R_3 are connected in series. Obtain expression for equivalent resistance R.

Q.21 Define TIR. Write essential conditions for TIR.