

PHYSICS QUESTION BANK – QUESTIONS ONLY

UNIT–1: WAVE MOTION, SHM & ACOUSTICS

2 Marks:

1. Define wave motion.
2. Distinguish between transverse and longitudinal waves.
3. Define wavelength and frequency.
4. What are beats?
5. Define Simple Harmonic Motion.

5 Marks:

1. Explain transverse and longitudinal waves with examples.
2. Explain Simple Harmonic Motion.
3. Distinguish between free, forced and resonant vibrations.
4. Explain reverberation and echo.

10 Marks:

1. Explain wave motion and derive wave equation.
2. Derive expressions for displacement, velocity and acceleration in SHM.
3. Explain acoustics of buildings and methods to control reverberation time.

UNIT–2: OPTICS

2 Marks:

1. State laws of reflection.
2. Define refractive index.
3. What is total internal reflection?

5 Marks:

1. Explain reflection and refraction of light.
2. Derive lens formula.
3. Explain defects of vision.

10 Marks:

1. Explain compound microscope with ray diagram.
2. Explain astronomical telescope in normal adjustment.

UNIT–3: ELECTROSTATICS

2 Marks:

1. State Coulomb's law.
2. Define electric field.
3. What is capacitance?

5 Marks:

1. Explain Gauss's law.
2. Derive capacitance of parallel plate capacitor.

10 Marks:

1. Apply Gauss's law to find electric field due to charged sphere.

UNIT-4: CURRENT ELECTRICITY

2 Marks:

1. Define electric current.
2. State Ohm's law.

5 Marks:

1. Explain Kirchhoff's laws.
2. Explain heating effect of electric current.

10 Marks:

1. Explain Ohm's law with experimental verification.
2. Explain Wheatstone bridge.

UNIT-5: ELECTROMAGNETISM

2 Marks:

1. Define magnetic field.
2. State Faraday's laws.

5 Marks:

1. Explain magnetic materials.
2. Explain force on current carrying conductor.

10 Marks:

1. Explain moving coil galvanometer and its conversion.

UNIT-6: SEMICONDUCTOR PHYSICS

2 Marks:

1. What is p-n junction?
2. Define rectifier.

5 Marks:

1. Explain p-n junction diode.
2. Explain half wave rectifier.

10 Marks:

1. Explain full wave rectifier with circuit diagram.

UNIT-7: MODERN PHYSICS

2 Marks:

1. What is laser?
2. Define population inversion.

5 Marks:

1. Explain characteristics of laser.
2. Explain optical fiber communication.

10 Marks:

1. Explain working of laser with applications.
2. Explain optical fiber and its applications.