Important Questions for Class 9^{th} and 10^{th} Physics Federal Board

Prepared by
Physicist Hammad Shaukat

Class 9^{th} Physics – Chapter-wise Important Questions (FBISE)

Chapter 1: Physical Quantities and Measurement

- Define physical quantity. Differentiate between base and derived quantities with examples.
- Write four basic rules for writing scientific notation.
- Define precision and accuracy. Give differences.
- Explain Vernier caliper with labeled diagram.

Chapter 2: Kinematics

- Define scalar and vector quantities with examples.
- Derive equation of motion: $v = u + at$
- Describe three equations of motion with symbols and units.
- Differentiate between distance and displacement.

Chapter 3: Dynamics

- State and explain Newton's laws of motion.

- Define inertia and momentum.
- Prove $F = ma$ using Newton's Second Law.
- Define friction and its types with examples.

Chapter 4: Turning Effect of Forces

- Define torque. Give its SI unit and formula.
- Explain conditions of equilibrium with example.
- What is a couple? Give two examples.
- Define center of mass and center of gravity.

Chapter 5: Gravitation

- State Newton's Law of Gravitation.
- Derive formula for gravitational force.
- Define mass and weight. Write two differences.
- Calculate value of g on the surface of Earth.

Chapter 6: Work and Energy

- Define work. Give formula and SI unit.
- Differentiate between kinetic and potential energy.
- State and prove the law of conservation of energy.
- Solve a numerical problem on power.

Chapter 7: Properties of Matter

- Define pressure and derive its formula.
- What is Pascal's Law? Give applications.
- Define Hooke's Law. Derive its formula.
- Differentiate between density and relative density.

Chapter 8: Thermal Properties of Matter

- Define heat and temperature.
- Define specific heat capacity and give formula.
- Explain thermal expansion in solids.
- Write any two methods of heat transfer.

Chapter 9: Transfer of Heat

- Explain conduction, convection, and radiation.
- Define good and bad conductors of heat.
- State Stefan-Boltzmann Law.
- Explain greenhouse effect briefly.

Class 10^{th} Physics – Chapter-wise Important Questions (FBISE)

Chapter 10: Simple Harmonic Motion and Waves

- Define simple harmonic motion. Give two examples.
- Derive the formula for time period of a simple pendulum.
- Differentiate between longitudinal and transverse waves.
- What is resonance? Give one example.

Chapter 11: Sound

- Define pitch and loudness.
- Derive formula for speed of sound in air.
- Define echo and write conditions for its formation.
- Write two applications of ultrasound.

Chapter 12: Geometrical Optics

- Define reflection and state its laws.
- Define critical angle and total internal reflection.
- Draw ray diagrams for convex and concave lenses.
- Write differences between real and virtual images.

Chapter 13: Electrostatics

- Define electric charge and its types.
- State and explain Coulomb's Law.
- Differentiate between conductors and insulators.
- Explain electroscope and its working.

Chapter 14: Current Electricity

- Define electric current, resistance, and voltage.
- State Ohm's Law. Derive formula.
- Define resistivity and write its unit.
- Explain series and parallel circuits with diagrams.

Chapter 15: Electromagnetism

- Define electromagnetism and write its applications.
- Explain magnetic field around a current-carrying wire.
- State Fleming's Left Hand Rule.
- What is electric motor? Write its principle.

Chapter 16: Basic Electronics

- Define electronics. What is a diode?
- Draw and explain the working of a full wave rectifier.
- Differentiate between analog and digital electronics.
- Define transistor and its types.

Chapter 17: Information and Communication Technology

- Define communication system with diagram.
- Write working principle of mobile phone.
- What is internet? Write two of its uses.
- Define modulation and its types.

Chapter 18: Atomic and Nuclear Physics

- Define radioactivity and half-life.
- Differentiate between fission and fusion.
- Write three safety precautions in handling radioactive material.
- What is background radiation?

These questions are selected to ensure a strong conceptual and exam-focused preparation. Practice them thoroughly for success.