

## Section-A

## Multiple Choice Questions (MCQ's)

**Q.1** Choose the correct answer for each from the given options:

- (i) According to Einstein's Quantum Theory light travel in the form of:  
(a) Waves      (b) Carpuscles      (c) Energy packets      (d) None of these

- (ii) At .S.T.P pure water boils at:  
 (a) 0K (b) 100K (c) 273K (d) 373K
- (iii) S.I unit of tension in a string is:  
 (a) Pound (b) Newton (c) Kilogram (d) Joule
- (iv) Right hand rule is used to find the direction of:  
 (a) Magnetic field (b) Current (c) Force (d) Voltage
- (v) \_\_\_\_\_ is concerned with the structure and properties of an atom.  
 (a) Bio-Physics (b) Plasma Physics (c) Atomic Physics (d) Nuclear
- Physics
- (vi) Dr. Abdul Qadeer Khan contributed in making Pakistan a \_\_\_\_\_ State.  
 (a) Islamic (b) Nuclear (c) Democracy (d) Welfare
- (vii) \_\_\_\_\_ s the first equations of motion.  
 (a)  $V_f^2 = V_i^2 + 2as$  (b)  $V_f = V_i + at$  (c)  $S = V_i t + \frac{1}{2} at^2$  (d)  $V_f^2 - V_i^2 = 2as$
- (viii) The capability of a force to rotate a body about a point is called \_\_\_\_\_  
 (a) Couple (b) Torque (c) Equilibrium (d) Motion
- (ix) The mass of Earth may be determined with the help of \_\_\_\_\_ law of Universal Gravitation.  
 (a) Boyle's (b) Newton's (c) Charle's (d) Coulomb's
- (x) One form of energy can be converted into another form of energy but total amount of energy remains \_\_\_\_\_  
 (a) Motion (b) Rest (c) Constant (d) None of these
- (xi) A strong wooden or metallic bar, which can be rotated about a point is called a \_\_\_\_\_  
 (a) Load (b) Effort (c) Constant (d) None of these
- (xii) The atmosphere is the blanket of air around the Earth. It extends up to about \_\_\_\_\_ above the surface of the Earth.  
 (a) 1000 Km (b) 1500 Km (c) 2000 Km (d) 2500 Km
- (xiii) \_\_\_\_\_ is the force that pushes an object immersed in a liquid in the upward direction.  
 (a) Buoyant force (b) K.E (c) P.E (d) Viscosity
- (xiv) Heat is the form of \_\_\_\_\_  
 (a) Energy (b) Work (c) Wave (d) Sound
- (xv) A \_\_\_\_\_ is a piece of transparent material.  
 (a) Lens (b) Fibers (c) Wood (d) Plastics
- (xvi) The sound heard after reflection from a surface is called an \_\_\_\_\_.  
 (a) Echo (b) Pitch (c) loudness (d) Quality
- (xvii) "G" is called \_\_\_\_\_.  
 (a) Gravitational acceleration (b) Gravitational force  
 (c) Gravitational constant (d) None of these

**Section-B**  
**(Short Answer)**

**Note: Answer any Eight of the following questions. Each question carries 05 marks.**

Q.2 What is the significant work of Dr. Abdul Qadeer Khan in the field of nuclear science?

Q.3 The radius of Hydrogen atom is  $0.53 \times 10^{-10}$  m convert it in cm, m, nm.

- Q.4 How can we determine the mass of Earth?  
Q.5 What is atmospheric pressure? How will you measure it?  
Q.6 What do you mean by anomalous behavior/ expansion of water? How does it help the aquatic animals to save their lives in frozen seas?  
Q.7 Define reflection of light, State the laws of reflection?  
Q.8 State coulomb's law and define the unit of charge.  
Q.9 A body of mass 50 kg is moving with an acceleration of  $5 \text{ ms}^{-2}$ . Find the force acting on the body.  
Q.10 What is Energy? How many forms of energy?  
Q.11 Differentiate between concave mirror and convex mirror.  
Q.12 Derive the equation :  $S = vit + \frac{1}{2} at^2$   
Q.13 What is meant by dispersion of light?

### Section-C

#### Descriptive Answer

**Note: Answer any TWO of the following questions. Each question carries 14 (7+7) marks.**

- Q.14(a) Explain how the value of "g" decrease with a change in altitude.  
(b) Determine the acceleration of a car of mass 900 kg, when a net force of 2700 N acts on it.  
Q.15(a) Define Momentum. Explain the law of conservation of momentum with the help of example.  
(b) What is the power of an engine that pulls a 1000 Kg automobile at a steady speed of 10 m/sec along a level road:  
Q.16 Write notes on any TWO of the following:  
Ohm's law - Thermal Expansion - States of Equilibrium