Section-A

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

(i) The work will be positive. if the angle between force and displacement is _____.
(a) 90° (b) 180° (c) 0° (d) 270°

(ii) The objective of a refracting telescope is a _____.
(a) Double convex lens (b) Convex mirror
(c) Plane mirror (d) Concave mirror

(iii) If vector sum of all the forces on a body is equal to zero, then it is said to in _____.
(a) Translational equilibrium (b) Rotational equilibrium
(c) Static equilibrium (d) Dynamic equilibrium

(iv) In transverse waves the distance between two consecutive crests is called _____.
(a) Displacement (b) Wave length (c) Velocity (d) None of these

(v) Pin hole camera was invented by _____.
(a) Al-Beruni (b) Ak-Kindi (c) Al-Khawarzmi (d) Ibn-ul-Haitham

(vi) The least count of the micremeter scrw gauge is _____
(a) 0.001 cm (b) 0.01 cm (c) 0.1 cm (d) 1 cm

(vii) "G" is called _____.
(a) Gravitational acceleration (b) Gravitational force
(c) Gravitational constant (d) None of these

(viii) Archimede's principle is applied to determine.
(a) Specific heat (b) Specific gravity (c) Specific resistance
(d) None of these

(ix) Electromagnetic waves carries _____.
(a) Wave length (b) Frequency (c) Charge (d) Energy

(x) To measure current in a caricuit an ammerter is always connected _____.
(a) in series (b) in parallel (c) in any way (d) parallel to voltmeter

(xi) If the inner surface of a spherical mirror is reflecting, it is called _____.
(a) Plane mirror (b) Concave mirror (c) Convex mirror (d) None of these

(xII) In a gas discharge tube the electric current is due to flow of _____.
(a) Electron (b) Positive ions (c) Negative ions (d) Neutrons

(xIIi) Which is more penetrating?
(a) Alpha rays (b) Beta rays (c) Gamma rays (d) None of these

(xIv) Which is the best approximation of the weight of an object of mass 800 grams?
(a) 80 N (b) 8 N (c) 0.8 N (d) 800 N

Section-B

Note: Answer any EIGHT of the following questions. Each question carries 2 marks.

Q.2 Define heat capacity.
Q.3 Is it possible for a body to be accelerated, if its speed is constant ? Explain.
Q.4 What are fundamental and derived units?
Q.5 Explain head to tail rule of vector addition.
Q.6 What is photon?
Q.7 What are gamma rays and describe its properties?

Q.8 In what way Al-Beruni was versatile scientist?

Q.9 Find the time taken by sunlight to reach the ground, if the distance between the sun and the earth is 1.5 x 108 km and velocity of light is 3 x 108 ms-1.

Q.10 What do you understand by two like and unlike parallel forces?

Q.11 What is a lever? Determine its mechanical advantage.

Q.12 What do you mean by convential current?

Q.13 Differentiate between transverse waves and longitudinal waves.

Section-C

(Descriptive Answer)

Note: Answer any TWO fo the following questions, Each question carries 14 (7 x 7) marks.

Q.14(a). What is meant by Young's modulus of eleasticity ? How will you show that steel is more elastic than rubber?

(b) A metal bar of cross sectional area 1000 mm2 is 4m long. A force of 5000 N increase its length by 0.25 mm. Find Young's modulus of the meatl.

Q.15(a): Define force? How does Newton's Second Law of Motion help in the measurement of force?

(b) What happens to the potential energy of a body, when dropped from certain height?

Q.16(a): What are spherical mirrors? Give some uses of spherical mirrors.

(b) The focal length of a convex lens is 10 cm. Where should an image be placed to get
(a) a real image
(b) a virtual image twice the size of the objects?