Grade: IX
Time: 2 hours

Assessment – 1

Subject : Physics
Maximum Marks : 80

Instructions : Read the question paper carefully. Write neatly and legibly with correct question numbers. Do not over write.Check the answers before submitting the answer sheet

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Section A is compulsory. Attempt any four questions from Section B.
The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A

(Attempt all questions from this Section.)

Question 1

Choose the correct answers to the questions from the given options. [15]

(i) The unit of thrust is:
a) N
b) kg
c) g
d) m/s

(ii) The pressure and thrust are related as
a) Pressure = Thrust
b) Pressure = Thrust x Area
c) Pressure = Thrust / Area
d) Pressure = Area / Trust

(iii) The fundamental unit is
a) newton
b) pascal
c) hertz
d) second

(iv) The diameter of a thin wire can be measured by :
a) a vernier callipers
b) a metre rule
c) a screw gauge
d) none of these

(v) Among which of the following is non- contact force.
a) Frictional force
b) normal reaction force
c) gravitational force
d) force of tension in a string

(vi) The property of inertia is more in :
a) a car
b) a truck
c) a horse cart
d) a toy car

(vii) The pressure inside a liquid of density ρ at a depth h is:
a) hρg
b) h / ρg
c) hρ / g
d) hρ

(viii) The value of G is:
a) 9.8 N $m^2\ kg^{-2}$
b) 6.7×10^{-11} N $m^2\ kg^{-2}$
b) 6.7×10^{-11} $m\ s^{-2}$
d) 6.7 N kg^{-1}

(ix) The S.I. unit of pressure is :
a) $N\ cm$
b) Pa
c) N
d) N m^2

(x) A vector quantity is :-
a) work
b) pressure
c) distance
d) velocity

(xi) For a uniformly retarded motion, the velocity time graph is:red
a) a curve
b) a straight line parallel to the time axis
c) a straight line perpendicular to the time axis
d) a straight line inclined to the time axis

(xii) What is the use of barometer ?
a) voltage b) water pressure
c) atmospheric pressure d) none of these

(xiii) The image formed by plane mirror is:
a) real b) virtual
c) virtual with lateral inversion d) real with lateral inversion

(xiv) A real and enlarge image can be obtained by using a:
a) convex mirror b) concave mirror
c) plane mirror d) either convex or plane mirror

(xv) The focal length of a concave mirror is 10 cm. Find its radius of curvature.
a) 20 cm b) 5 cm
c) 1/5 cm d) 30 cm

Question 2

(i) A car of mass 480 kg moving at a speed of 54 km/h is stopped by applying brakes in 10 s. Calculate the force applied by the brakes. [3]

(ii) Complete the following: (i) 1 m = _____ μ (ii) 1 quintal = ____ kg [2]

(iii) What are the fundamental units in S.I. system? [2]

(iv) What is lunar month? [2]

(v) Define the term:- (a) Oscillation . (b) Frequency [2]

(vi) What are the differences between real and virtual image ? [2]

(vii) Draw a ray diagram to show the formation of image by a concave mirror for an object placed between its pole and focus. [2]

Question 3

(i) What are the differences between Mass and weight [2]

(ii) In Displacement-time graph draw graph for stationary object. [2]

(iii) In Velocity - time graph draw graph for uniform acceleration. [2]

(iv) What is a seconds' pendulum ? [2]

(v) State the two laws of reflection of light. [2]

SECTION B

*(Attempt **any Four** questions from this Section.)*

Q1) **a)** Name the three system of unit and state the various fundamental units in them. ? [3]

b) A train moving with a velocity of 20 m s^{-1} is brought to rest by applying brakes in 5 s. Calculate the retardation. [3]

c) What is a simple pendulum ? Name two factors on which the time period of simple pendulum does not depend. [4]

Q2) **a)** What are the differences between Concave and convex mirror. [3]

b) Explain A ship submerges more as it sails from sea water to river water. [3]

c) An object 5 cm high is placed at a distance 60 cm in front of a concave mirror of focal length 10 cm. Find (i) the position and (ii) size, of the image. [4]

Q3) **a)** Write three characteristics of the image formed by plane mirror ? What is meant by lateral inversion? [3]

b) State Newton's first law of motion. What is meant by the term inertia ? [3]

c) When brakes are applied to a bus, the retardation produced is 25 cm s^{-2} and the bus takes 20 s to stop. Calculate : (i) the initial velocity of bus, and (ii) the distance travelled by bus during this time. [4]

Q4) **a)** Describe an ~~expression~~ to demonstrate that air exerts pressure. [3]

b) A body initially at rest travels a distance 100 m in 5 s with a constant acceleration. Calculate : (i) the acceleration, and (ii) the final velocity at the end of 5 s. [3]

c) State Newton's law of gravitation and importance of gravitation ? [4]

Q5) **a)** Deduce an expression for the pressure at a depth inside a liquid ? [3]

b) State the laws of liquid pressure. [3]

c) At what distance in front of a concave mirror of focal length 10 cm, an object be placed so that its real image of size five times that of the object is obtained ? [4]