



TEST PAPER: PHYSICS

Time: 45 Minutes

Class: C.B.S.E. 9

Max. Marks: 30 Marks

Date: 5th September 2018

Marking Scheme: All questions carry 10 marks each. Subparts (A) and (B) carry 3 marks each and subpart (C) carries 4 marks.

Question 1:

A. Choose correct option:

- i) Even though stone also attracts earth towards itself, earth does not move
 - a) Because of greater mass of earth
 - b) Because of lesser mass of stone
 - c) Force exerted by stone is less
 - d) Force exerted by earth is large
- ii) The weight of an object is
 - a) Greater on earth and lesser on moon
 - b) Lesser on earth and greater on moon
 - c) Equal on both earth and moon
 - d) None on these
- iii) If the distance between the object increase, mass remaining same then the gravitational forces between the object will
 - a) Increase
 - b) Decrease
 - c) Remain same
 - d) None of the above

B. Answer the following:

- i) State Archimedes principal. Give applications of the same.
- ii) How does force of gravitation between two objects change when the distance between them is reduced to half?

C. A ball thrown up vertically returns to the thrower after 6 s. Find:

- a) The velocity with which it was thrown up
- b) The maximum height it reaches
- c) Its position after 4 sec

Question 2.

A. Answer the following

- i) What is relative density? Give its SI unit
- ii) What do you mean by buoyancy?
- iii) What is density? Give its SI unit

B. Answer the following

- i) Why does an object float or sink when placed on the surface of water?
- ii) Prove acceleration experienced by an object is independent of mass of object.

C. Solve: A stone is allowed to fall from the top of a tower 100 m high and at the same time another stone is projected vertically upwards from the ground with a velocity of 25 m/s. Calculate when and where the two stones will meet.

Question 3.

A. Answer the following

- i) What is thrust? Is thrust a scalar or vector quantity?
- ii) Define pressure. Is pressure a scalar or vector quantity?
- iii) State universal law of gravitation

B. Answer the following:

- i) The mass of a man is 75 kg. Find his weight on surface of earth? What will be his weight on surface of moon?
- ii) A stone is released from the top of a tower of height 19.6 m. Calculate its final velocity just before touching the ground.

C. Solve: The mass of the earth is 6×10^{24} kg and that of the moon is 7.4×10^{22} kg. If the distance between the earth and the moon is 3.84×10^5 km, calculate the force exerted by the earth on the moon. $G = 6.7 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$.