

- ii) Name two non-contact forces other than (i).
- c) i) What is greenhouse effect? (4)
- ii) State one technological and one economic measure to minimize global warming.

Half Yearly Examination - 2018-19

Physics

Class : VIII

Time : 2 Hrs. + 15 min.

Full Marks : 80

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- 1 a) Which physical quantity do the following units measure : (2x5=10)
- (i) cm^3 (ii) J (iii) $^{\circ}\text{F}$ (iv) K
- b) Give two differences between distance and displacement.
- c) Explain why dust particles are removed from the carpet by beating it.
- d) Find the momentum of a body of mass 500 g which moves with a velocity of 500 m/s
- e) At what temperature the density of water is maximum? State its value.
- 2 a) Name two substances which contract on heating. (2X5=10)
- b) Draw a diagram to show the temperature of various layers of water in an ice covered pond.
- c) Draw a diagram to show the various forces acting on a book lying on a table top.
- d) A car of mass 480Kg moving with a speed of 15m/s is stopped by applying brakes in 10 seconds. Find the force applied by the brakes.
- e) What is an ecosystem?
- 3 a) State two ways for judicious use of energy. (2x5=10)

- b) Select non-renewable and renewable sources of energy from the following:
 (i) Wood (ii) Wind (iii) Coal (iv) Diesel
- c) Give two examples of non-contact forces.
- d) State and define the SI unit of force.
- e) Name two factors on which the force needed to stop a moving body in a given time depends.
- 4 a) The ultimate source of energy is the _____ energy and it is a _____ source of energy. (2x5=10).
- b) Name two greenhouse gases and name the radiation which are absorbed by greenhouse gases.
- c) Draw a graph showing the dependence of acceleration or force for constant mass.
- d) State the effect of a force applied on a non-rigid body. Give one example.
- e) Differentiate between heat and temperature on the basis of (i) unit and (ii) method of measurement.

SECTION B (40 marks)

ATTEMPT ANY FOUR QUESTIONS

5. a) Derive a relation between the SI and CGS unit of force (3)
- b) Which law defines force quantitatively? State the law. (3)
- c) Give two advantages and two limitations of using nuclear energy. (4)
- 6 a) Does the value of 'g' remain the same in all places on the earth surface? Give reasons. (3)

- b) Which law defines inertia. State the law (3)
- c) What is hydro-energy? Give one advantage and two limitations of using hydro-energy. (4)
7. a) Convert 60°C to $^{\circ}\text{F}$. (3)
- b) Draw a diagram to illustrate a simple food chain. (3)
- c) When brakes are applied to a bus the retardation produced is 25cm/s^2 and the bus takes 20s to stop.

Calculate: i) the initial velocity of the bus and (ii) the distance travelled by the bus during this time. (4)

- 8 a) Explain why the vessel when falls on a hard floor breaks but do not break when falls on a carpet. (3)
- b) State the SI unit of temperature. Convert 0°C to the SI unit. (3)
- c) Why are crops destroyed during very cold nights? What do farmers do to protect the crops. (4)
- 9 a) State one similarity and two differences between speed and velocity. (3)
- b) i) State the CG.S. unit of heat. How is it related to the SI unit. (3)
- ii) State the second law of thermodynamics.
- c) A ball is thrown vertically upwards. It returns 6s later. Calculate: i) the greatest height reached by the ball and ii) the initial velocity of the ball. ($g = 10\text{m/s}^2$) (4)
- 10 a) Define acceleration. State its SI unit. (3)
- b) i) Give an example of a non-contact force which is always attractive in nature. (3)