

Quarterly Examination - 2018-19

PHYSICS

Class : VII

Time : 2 Hrs. 15 mints

Full Marks : 80

Q1. Write the CGS and S.I. units of the following physical quantities. (4)

- a) Volume
- b) Density
- c) Force
- d) Energy

Q2. Name the following. (15)

- a) Two types of mechanical energy
- b) Unit of frequency
- c) The scientist who formulated the basic laws of gravitation
- d) Two types of potential energy
- e) The instrument used to measure weight in a jeweller's shop
- f) A device used to test whether a battery is fully charged
- g) An example of a non-contact force
- h) Two factors on which kinetic energy depends
- i) The motion in which there is simultaneous occurrence of both rotational and translational motion.
- j) Another name for rotatory motion.

- (i) What is the distance he travels? (1)
- (ii) What is the displacement? (1)
- (iii) Is the distance covered equal to the displacement? Why? (2)

Q10. State the type of motion in each case below. (5)

- a) Marching of soldiers in a parade.
- b) A spinning top.
- c) Motion of a pendulum.
- d) Swinging of your arms or legs as you walk.
- e) Brownian movement.

Q11. Draw a simple pendulum when its bob is displaced slightly to one side. Mark on the diagram - (1+3)

- (i) Point of Suspension,
- (ii) Point of Oscillation,
- (iii) Length of the Pendulum,
- (iv) Mean Position,
- (v) Extreme Position,
- (vi) Amplitude

Q12. Answer the following :

- a) A bullet of mass 0.01 kg is moving with a velocity of 200 m/s. Find the kinetic energy of the bullet.
- b) A train takes 4 hours to reach from Station A to Station B, and then 4 hours to return. The distance between the two stations is 200 km. Calculate the average speed of the train.
- c) Find the mass in kg of 1L of mercury, if the density of mercury is

$$13.6 \times 10^3 \frac{\text{kg}}{\text{m}^3}$$

Q5. Match the following (Do not draw lines. Write in pairs) (4)

- | | |
|-------------------------------------|--|
| a. 1L | (i) 1000 cm ³ |
| b. $1 \frac{\text{g}}{\text{cm}^3}$ | (ii) 1000 $\frac{\text{kg}}{\text{m}^3}$ |
| c. 1 kgf | (iii) 1N |
| d. 1J | (iv) $\frac{1}{\text{T}}$ |
| e. 10 ⁵ dyn | (v) 10 N |
| f. 1 calorie | (vi) 4.2 J |
| g. f | (vii) 10 ⁷ erg |

Q6. Conversion (6).

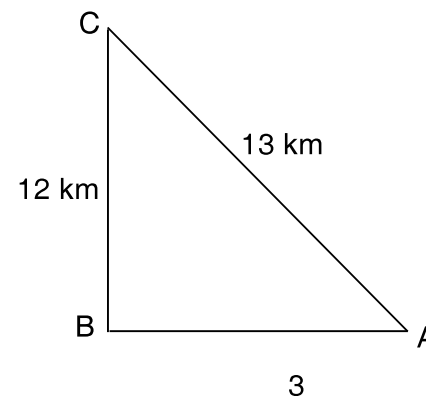
- a) 1000 cm³ into m³
- b) 10 hectare into m²
- c) 3½ hours into minutes

Q7. Draw a spring balance and label its parts (5)

Q8. Write two difference between (4)

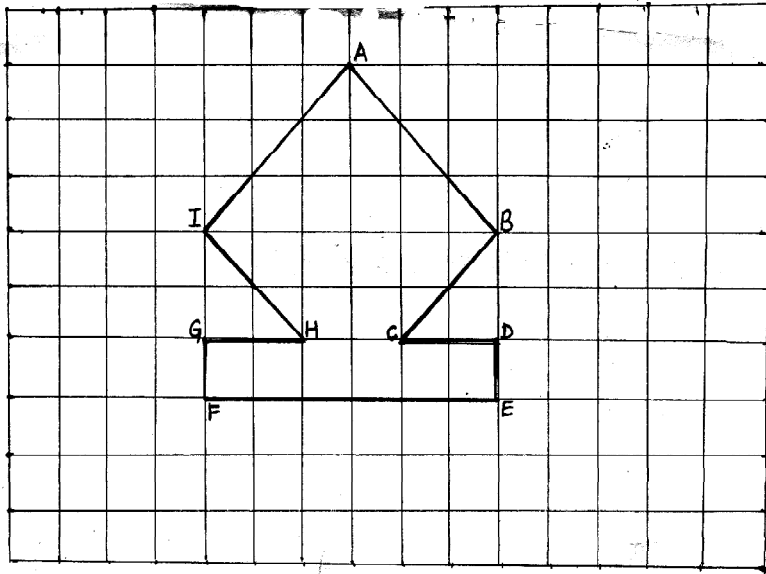
- a) Speed and Velocity
- b) Mass and Weight

Q9. A man starts walking from A due west for 5 km and reaches B. Then from B he walks due north for 12 km and reaches C.



- k) One complete to and fro movement of a pendulum about its mean position
- l) A physical quantity that needs both magnitude and direction for its complete description.

Q3. Calculate the area of the irregular surface. (3)
(1 unit = 1 cm²).



Q4. Define.

- a) Capacity
- b) Body at rest
- c) Frequency of a Simple Pendulum
- d) Law of Conservation of Energy
- e) Simple Pendulum

- d) Calculate the weight of a body on the moon having mass 5 kg, if the acceleration due to gravity is 1.6 m/s².

Q13. Answer the questions below. (2 x 3 = 6)

- a) Equal volumes of different substances are weighed on a beam balance. Will the weights be the same? Why?
- b) You are travelling in a train. You find the suitcases kept near you are in a state of rest. Are the suitcases passing by in a state of rest or motion? Why?
- c) Take a beaker containing water. Put some ice cubes into it. Will the ice cubes sink or float in the water? Why?

Q14. Choose the correct option from the bracket and fill in the blanks. (2)

- a. Total mechanical energy is the ____ (difference/ product/sum) of its potential and kinetic energy.
- b. As we go to a higher altitude, the weight of our body ____ (increases / decreases / remain same).