PR IX (01) 14

PHYSICS

9th (Fresh / Reappear)

Time Allowed: 3 Hours Marks: 65

Note:- Three are THREE sections in this paper i.e. Section A. B and C.

Attempt Section-A on the same paper and return it to the superintendent within the given time.

No marks will be awarded for Cutting, Erasing or Overwriting. Marks of Identification will lead to UFM case, Mobile Phone etc are not allowed in the examination hall.

Time Allowed: 15 minutes Section – A Marks: 12

Q1:- Write the correct option i.e. A, B, C or D in the empty box provided opposite to each part.

(1) Which one the measured by using a micrometer?
(a) Current (b) Force (c) Length (d)Mass $\boxed{C}$

(2) A truck accelerates uniformly from [illegible]ms^{-1} to $20ms^{-1}$ in 5 sec. what is the acceleration of truck?
(a) $2ms^{-2}$ (b) $1.5ms^{-2}$ (c) $1ms^{-2}$ (d) $2.5ms^{-2}$ $\boxed{C}$

(3) The rate of change of velocity is called …… $\boxed{A}$
(a) Acceleration (b) Displacement (c) Speed (d) Distance

(4) The unit of weight is ……….. $\boxed{A}$
(a) Newton (b) Kilogram (c) Meter (d) ms^{-1}

(5) A 100N force acts along the X-axis. Its y-component is ……….. $\boxed{A}$
(a) 0N (b) 50N (c) 100N (d) 25N

(6) The value of "g" at the centre of the earth is ………… $\boxed{D}$
(a) Maximum (b) $\frac{1}{2}g$ (c) $\frac{1}{4}g$ (d) Zero

(7) Atmospheric pressure in Passcal is approximetely………… $\boxed{D}$
(a) 10^2 (b) 10^3 (c) 10^4 (d) 10^5

(8) Barometer is used to measure ………… $\boxed{D}$
(a) Density (b) Vapor Pressure
(c) Normal Pressure (d) Atomospheric Pressure

(9) The major source of energy on earth is ……… $\boxed{A}$
(a) Rediation from sun (b) Fossil fuels
(c) Forest (d) Hydroelectricity

(10) The relation between co efficient of linear and volume expansion is ……….. $\boxed{B}$
(a) $\gamma = 2\alpha$ (b) $\gamma = 3\alpha$ (c) $\gamma = 4\alpha$ (d) $\gamma = 5\alpha$

(11) The rate of doing work is defined as ……… $\boxed{C}$
(a) Energy (b) Force (c) Power (d) Momentum

(12) Which on is not a base quantity? $\boxed{D}$
(a) Length (b) Mass (c) Time (d) Force

Note:- Time Allowed for Section – B and Section – C is 1 Hour and 45 minutes.

Section – B Marks: 32

QII:- Answer any Eight parts. Each part carries FOUR Marks.

1. How much water in units of litre can fill a water tank of $1m^3$ capacity? Explain.
2. Can a body at rest be regarded in a state of motion? Give example.
3. By giving example prove that rest and motion are relative terms.
4. Differentiate between mass and weight.
5. Why does a helicopter has a second rotor on its tail?
6. How you determine the centre of gravity of irregular shape body?
7. Why it is not easy to whiri a hammer by a longer chain?
8. Moon is attracted by the earth, why it does not fall on earth?
9. What is the basic principle of hydraulic press?
10. Why is water used as coolant in radiators of auto mobile engines?
11. Give three ways in which insulating materials can be used to reduce heat losses from a house.

Section – C Marks: 21

Note:- Attempt any Three questions. All questions carry equal masrks.

QIII: (a) Distinguish between base and derived physical quantities. 4

(b) Brakes are applied to a train traveling at 72 kmh^{-1} after passing over 200m its velocity is dreduced to $36kms^{-1}$ at the same rate of retardation, how much further will it go before it is brought to rest. 3

QIV: (a) Define momentum. Explain the law of conservation of momentum. 4

(b) A force of 100N is applied perpendicularly at a distance of 0.50m to turn a nut of the wheel of a bus. Find the torque acting on the nut? 3

QV: (a) Differentiate between centripetal force and centrifugal force. 4

(b) A ball of weight 100N is moving on a frictionless surface with a velocity of $10ms^{-1}$. Compute its kinetic energy. 3

QVI: (a) State and explain Archimedes principle. 4

(b) 0.5kg of copper needs 1950J of heat to raise its temperature through 10^0C. Calculate the heat capacity of simple. 3