Serial No. Of the Answer Book
Roll No. (in figure)_____
(in Words) _____

P-31

Superintendent Seal & Signature

FIC. No (For office use only)

901601

PHYSICS (Fresh) 9th

FIC. No (For office use only)

Total Time: 3 Hours **Max: Marks: 65**

Note: There are THREE Sections of this Paper i.e. A,B and C, attempt each according to the given instructions.

Time: 20 Minutes **SECTION-A** **Marks: 12**

Note: Attempt all parts of Section – A. Section –A must be return to the superintendent after 20 minutes even if you have not attempted any question. Overwriting/ defacing/Cutting etc is prohibited in Section-A and no credit will be given to such answer.

I. Write the correct option i.e. A/B/C/D in the empty boxes.

i. The least count of vernier calliper is _____. C

(A) .001mm (B) 0.01mm (C) 0.1mm (D) 0.0001mm

ii. The displacement covered in unit time is called _____. B

(A) Speed (B) velocity (C) acceleration (D) distance

iii. A truck accelerates uniformly from $15ms^{-1}$ to $20\ ms^{-1}$ in 5 seconds. what is the acceleration of the truck _____. C

(A) $2ms^{-2}$ (B) $1.6ms^{-2}$ (C) $1ms^{-2}$ (D) $2.5ms^{-2}$

iv. Which one is the unit of weight? _____. A

(A) Newton (B) Kilogram (C) meter (D) ms^{-1}

v. $\sin\theta$ = _____ B

(A) $\frac{F_x}{F}$ (B) $\frac{F_y}{F}$ (C) $\frac{F_y}{F_x}$ (D) None of these

vi. A 100 N force acts along the x- axis- its y- component is _____. A

(A) 0 N (B)50 N (C) 100N (D) 25N

vii. The centripetal acceleration is represented by an equation a_c = _____. A

(A) v^2/r (B) $v^2.r$ (C) v/r^2 (D) $v \times r^2$

viii. In SI the unit of energy is _____. C

(A) Newton (B) Kilogram (C) Joule (D) None of these

ix. The density of mercury in $kg\ m^{-3}$ is _____. D

(A) 1000 (B) 2000 (C) 6000 (D) 13600

x. In Kelvin scale of temperature the boiling point of water marked as _____ A

(A) 373 k (B)273 K (C) 0° C (D) 100° C

xi. The best absorber of radiation is a body whose surface is _____. C

(A) White (B) Grey (C)Dull black (D) Highly polished

xii. Clock wise torque is taken _____. A

(A) Negative (B) positive (C) parallel (D Zero

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PHYSICS Fresh) 9th

Note: Time allowed for section B and C is 2 hours and 40 minutes.

SECTION "B"

Marks: 32

II. Attempt any EIGHT Parts out of the following. Each Part carries equal marks.

i. Define Quantum physics and Astro Physics

ii. By giving an example prove that rest and motion are relative terms.

iii. An iron shot of mass 6 g is fired with an air gun. If the velocity of the shot is 62 ms^{-1}. What is its momentum?

iv. Why it is dangerous to jump out of a moving vehicle?

v. Explain why door handles are not put near hinges?

vi. If the distance between two objects is tripled, what is the decrease in the gravitational force?

vii. Define energy. Write the names of some forms of energy.

viii. An electric heater is heated at 250 w, calculate the quantity of heat generated in 10 minutes.

ix. Why we cannot use water instead of mercury in barometer?

x. What is the energy needed to melt 2 kg of ice at 0° C in joules?

xi. Why is the freezer compartment kept at the top of a refrigerator? Explain briefly.

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SECTION "C"

Marks: 21

Note: Attempt any THREE questions of the following. Each question carries equal Marks.

III. (a) Derive the following equation of motion by graph. ($Vf = V_i + at$). 4

(b) What force would be needed to produce acceleration of 10 m s^{-2} in a ball of mass 0.5 kg. 3

IV. (a) Define moment of force. On what factors does it depends? 4

(b) Calculate the force of gravitation due to earth on a child weighing 10 kg standing on the ground (Take g = 10 m s^{-2}) 3

V. (a) Define kinetic energy. Derive the expression used for kinetic energy. 4

(b) State and explain pascal's law. 3

VI. (a) The temperature of normal human body is 37^0 C. Find this temperature on the Fahrenheit scale? 4

(b) Explain conduction of heat. Describe its two applications. 3