Sig. of Supdt.....

KT-IX-1901
Physics (9th)
Fresh

Roll No.....

Fic. No.....

Fic. No.....

Time allowed: 3 Hrs **Code: E** **Physics (9th)** **Fresh** **Marks: 65**

Note: There are three sections of the paper, A, B & C. Carefully read the instructions for each section and attempt accordingly. Attempt all questions of section - (A) and return it to the superintendent within the given time.

Time: 15 Minutes **Section "A"** **Marks: 12**

Q.1 Write the correct option i.e. A, B, C or D in the empty box provided opposite to each part. Cutting, erasing and over writing will not be awarded.

i. If a petrol engine does 40J of useful work for every 100J of energy supplied to it, then its efficiency is [C]
A. 80% B. 60% C. 40% D. 20%

ii. One Pascal (Pa) is equal to ..... [D]
A. $\frac{1N}{m}$ B. 1Nm C. $1Nm^2$ D. $\frac{1N}{m^2}$

iii. 37°C is equal to ..... [B]
A. 60°F B. 98.6°F C. 32°F D. 180°F

iv. The S.I unit of specific heat is ..... [A]
A. $J\ Kg^{-1}\ K^{-1}$ B. $J\ Kg^{-1}$ C. J Kg D. $J\ K^{-1}$

v. Which of the following is derived quantity? [C]
A. Mass B. Electric current C. Force D. Luminous intensity

vi. The number of significant figure in 0.0570 is ..... [C]
A. 5 B. 4 C. 3 D. 2

vii. The area under of speed – time graph represents ..... [D]
A. Velocity B. Acceleration C. Speed D. Distance

viii. Dynamics is branch of physics which deals with ..... [A]
A. Cause of motion B. Sound C. Study of solids D. Bodies at rest

ix. Roshan is pulling a box on the floor with a force of 50N making an angle of 60° with the horizontal. The horizontal component of force will be ..... [C]
A. 75N B. 50N C. 25N D. 20N

x. The shortest distance between two couples forces is ..... [B]
A. Moment arm B. Couple arm C. Radius D. Diameter

xi. The unit of gravitational constant 'G' is ..... [A]
A. $Nm^2\ Kg^{-2}$ B. N. Sec C. Kg m Sec^{-2} D. Kg m Sec^{-1}

xii. Which of the following have the same unit? [B]
A. Speed & acceleration B. Work & energy C. Torque & momentum D. Force & Pressure

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KT-IX-1901

Physics (9th)

Fresh / Reappear

Time: 2 Hours 45 Minutes

Section "B"

Marks: 32

Q.2 Answer any EIGHT **parts**. All parts carry equal marks.

i. Why area is a derived quantity?

ii. Define any four branches of physics.

iii. Is it possible for an object to be accelerating and at rest at the same time? Explain with example.

iv. Describe a situation in which the speed of an object is constant while the velocity is not.

v. Write two advantages and two disadvantages of friction.

vi. Why a balloon filled with air move forward, when its air is released?

vii. A force of 50N acts on a body and making an angle of 60° with horizontal. Find its vertical and horizontal components.

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

ix. Moon is attracted by the earth, why it does not fall on earth?

x. Can an object have different amounts of gravitational potential energy if it remains at the same elevation?

xi. Why white clothes are preferred wearing in summer? Explain briefly.

Section "C"

Marks: 21

Note: Attempt any THREE questions. All questions carry equal marks.

Q.3 a. Prove graphically that $S = Vit + \frac{1}{2} at^2$.

b. A car is moving at a speed of 120 km / h. By applying breaks the car comes to rest after covering a distance of 50m. What is the deceleration of the car?

Q.4 a. Define isolated system. Explain the law of conservation momentum.

b. Two bodies of masses 3kg and 5kg are tied to string which is passed over a pulley. If the pulley has no friction, find the acceleration of the bodies and tension in the string.

Q.5 a. State and explain the law of universal gravitation. Also show that the law obeys Newton's third law of motion.

b. The Hubble space telescope orbits earth ($m_E = 6 \times 10^{24}$Kg) with an orbital spee 7.6×10^3 m/s. Calculate its altitude above earth's surface.

Q.6 a. State Pascal's principle and explain with example.

b. An 80cm long, 1.0 mm diameter steel guitar string must be tightened to a tension of 200N by turning the turning screws. By how much is the string stretched?