PHYSICS (New) Class 9th Time: 20 Minutes Marks: 12 **Multiple Choice Questions** **01 Mark for each**	Paper Code ① ● ③	Roll No. of the Student **Serial No. Of the Answer Book**_____

SECTION-A

Note:

1) Attempting all MCQs is compulsory. This paper along with the OMR sheet must be returned to the superintendent after due time.
2) Fill the circle Ⓐ/Ⓑ/Ⓒ/Ⓓ, which one is correct with blue or black ball point, in this sheet as well as in separate OMR Sheet like ●
3) If more than one circle in the OMR sheet is filled then no credit will be given to such answer.

I. i. Two equal and opposite parallel forces acting different lines on a body constitute _____.

Ⓐ A couple Ⓑ Moment arm Ⓒ Torque Ⓓ Momentum

ii. The Value of 'g' at equator is _____.

Ⓐ Same at poles Ⓑ Longer at poles Ⓒ Smaller at poles Ⓓ None of these

iii. Kwh is unit for _____.

Ⓐ Power Ⓑ Efficiency Ⓒ Energy Ⓓ None of these

iv. Young modulus is measured in units of _____.

Ⓐ Kgm^{-3} Ⓑ Pa Ⓒ N Ⓓ None of these

v. The S.I unit of heat is _____.

Ⓐ J Ⓑ Kg Ⓒ K^{-1} Ⓓ Watt

vi. The transfer of heat from one place to another by the bulk motion of fluids is called _____.

Ⓐ Radiation Ⓑ Conduction Ⓒ Convection Ⓓ None of these

vii. The least count of Vernier Caliper is _____.

Ⓐ 1cm Ⓑ 0.1cm Ⓒ 1mm Ⓓ 0.1mm

viii. The slope of distance time graph represents.

Ⓐ Acceleration Ⓑ Distance Ⓒ Speed Ⓓ Displacement

ix. Which of the following is a vector quantity.

Ⓐ Distance Ⓑ Mass Ⓒ Displacement Ⓓ Time

x. 72km/hr is equal to _____.

Ⓐ $20ms^{-1}$ Ⓑ $36ms^{-1}$ Ⓒ $60ms^{-1}$ Ⓓ $10ms^{-1}$

xi. The time rate of change of linear momentum of a body is equal to _____.

Ⓐ Torque Ⓑ Acceleration Ⓒ Force Ⓓ Velocity

xii. The centripetal acceleration for an object of mass 1kg moving with $4ms^{-1}$ in a circle of radius 2m is _____.

Ⓐ $18ms^{-2}$ Ⓑ $16ms^{-2}$ Ⓒ $12ms^{-2}$ Ⓓ $8ms^{-2}$

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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. Differentiate between base quantities and derived quantities by giving at least two examples of each.

ii. Find the number of seconds in the month of November, and express the number in power of 10 notation.

iii. An air craft takes off at 295km/h after accelerating from rest at 2.80m/s^2. What is the minimum runway length required.

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

v. In uniform circular motion, is the velocity constant? Is the acceleration constant? Explain.

vi. A force of 100N is acting on a body by making 60° angle with horizontal. Find its horizontal & vertical components.

vii. Why does wearing high. Heeled Shoes Sometimes cause lower back pain?

viii. Why for same height larger and smaller satellites must have same orbital speeds?

ix. An object of mass 10kg is lifted vertically through a height of 5m at a constant speed. What is the gravitational potential energy gained by the object?

x. Which material is more elastic, steel or rubber and why?

xi. Why are small gaps left behind the girders mounted in walls?

SECTION "C"

Marks: 21

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

III. (a) State and explain Newton's three laws of motion. 4
(b) A car starts from rest and moves with uniform acceleration of 1.9m/s^2 for 12sec. Find the velocity & distance covered? 3

IV. (a) How is the value of 'g' changing by going to higher altitude? Write the relevant formula? 4
(b) Define kinetic energy. Derive the expression sued for kinetic energy. 3

V. (a) What is atmospheric pressure? How is it measured by using a mercury barometer? 4
(b) A rectangular glass block of dimensions 30cm by 5cm by 10cm weighs 37.5N. Calculate the least and the greatest pressure it can exert when resting on a horizontal table? 3

VI. (a) Define heat capacity and specific heat capacity of a substance. Explain the importance of high specific heat capacity of water. 4
(b) Discuss the green house effect. Explain its importance and global warming concern. 3