

PHYSICS (New Course)9th (Fresh/Reappear)

- ۱۔ ہر سوال کے سامنے چار دائرے دیئے گئے ہیں، صرف صحیح جواب والا دائرہ بھریں۔
- ۲۔ دائروں کو شیڈ (بھرنے) کے لیے نیلے یا کالے رنگ کا کراستول کریں۔
- ۳۔ جواب میں ایک سے زائد دائرے بھرنے سے جواب غلط تصور ہوگی۔

Time: 15 Minutes**SECTION-A****Marks: 12****Q1: Choose the correct option i.e, A,B,C or D?**

- If the mass of an object is doubled, its gravitational potential energy changes by factor.
☒ 2 ☐ 1/2 ☐ 4 ☐ 1/4
- The amount of energy released when 3330kg of mass is converted into energy is.
☒ $2700 \times 10^{16} \text{ J}$ ☐ $270 \times 10^{16} \text{ J}$ ☐ $27 \times 10^{16} \text{ J}$ ☐ $2.7 \times 10^{16} \text{ J}$
- A hammer exerts a force of 25N on each of two nails A and B. The cross sectional area of A is greater than B, the pressure exerted by hammer is.
☐ Greater on nail A ☒ Greater on nail B
☐ Same on A & B ☐ Independent of area
- The average surface temperature of earth is approximately 59°F, which is equivalent to.
☐ -5°F ☒ 15°C ☐ 138°C ☐ 288°C
- The force of friction can be increased between surfaces by.
☐ Lubricating them ☒ Making them rough
☐ Making them smooth ☐ Increasing area of contact
- The SI unit of torque is.
☒ Nm ☐ Ns ☐ Nm^{-1} ☐ Ns^{-1}
- A compact disk rotating in a CD player with constant angular velocity is an example of.
☐ Static equilibrium ☐ Translational equilibrium
☒ Rotational equilibrium ☐ Neutral equilibrium
- If the distance of an object from the centre of the earth increase, its weight.
☐ Becomes zero ☒ Decreases ☐ Increases ☐ Remains same

9. A power station generates 500MW electricity, which is equivalent to.
☐ $5 \times 10^5 \text{ W}$ ☒ $5 \times 10^6 \text{ W}$ ☐ $5 \times 10^7 \text{ W}$ ☐ $5 \times 10^8 \text{ W}$
10. The vector quantity among the given is.
☐ Energy ☐ Power ☐ Density ☒ Torque
11. The slope of a distance time graph gives.
☐ Distance ☒ Speed ☐ Velocity ☐ Acceleration
12. The force required to produce a change in momentum of 700Ns in a body in 10 seconds is.
☐ 7N ☒ 70N ☐ 700N ☐ 7054N

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Note: Time allowed for Section-B & Section-C is 2 Hours and 40 Minutes.

SECTION-B

Marks: 32

Q2: Answer any EIGHT parts. Each part carries 4 marks?

- Differentiate the base and derived physical quantities among the following:
 Luminous Intensity, Torque, Electric Current, Velocity, Temperature, Distance, Weight, Pressure
- A stone is dropped from a bridge and reaches the surface of water in 7 seconds. Find the height of the bridge from the surface of water?
- State Newton's third law of motion and give two examples?
- Find the magnitude of centripetal force on a body of mass 4kg moving with velocity 6m/s in circle of radius 2m?
- State head-to-tail rule for vector addition of forces?
- Ali is pushing a cart with a force of 40N at 60° with floor. Find the vertical and horizontal components of force?
- What is gravitational force? Does sun exert a stronger force on the Jupiter than the Jupiter exerts on the sun? Justify your answer?
- A person pushes a shopping cart with a force of 30N at an angle of 45° with horizontal over a distance of 5m. Calculate the work done on the cart?
- What is the law of conservation of energy and how does it relate to electricity generation?
- What are stress and strain? Write their mathematical forms and units?
- Define conduction and explain how woolen sweaters keep us warmer in winter?

SECTION-C

Marks: 21

Q3: Attempt any THREE questions. All question carry equal marks?

1. Describe motion and compare rotatory motion and vibratory motion with respect to:
 - (a) Movement of particles of an object
 - (b) Path of motion give examples from real life
2. (a) Obtain the expression for calculating mass of earth using law of universal gravitation?
(b) Determine the gravitational force between two bodies of masses $3 \times 10^3 \text{ kg}$ and $8 \times 10^3 \text{ kg}$, when they are separated by 0.5 m .
($G = 6.67 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$)
3. (a) How does pascal's law explain the uniform transmission of pressure in a confined fluid? Explain with the help of example?
(b) The small piston of a hydraulic lift has an area of 0.20 m^2 where the large piston has an area of 0.90 m^2 . A car weighing $1.2 \times 10^4 \text{ N}$ sits on rack mounted on the large piston. How large a force must be applied to the small piston to support the car?
4. (a) Explain the linear thermal expansion of solids and the factors on which it depends?
(b) A railway line made of iron is 1200 km long and is laid at 27°C . By how much will it expand in summer when temperature rises to 42°C .
($\alpha = 12 \times 10^{-6} \text{ K}^{-1}$)

