

D.G.Khan Board 2018

Class 9th

Physics

Group - I

- The SI unit of work is:
 - Watt
 - Joule
 - Meter
 - Volt
- The formula of kinetic energy is:
 - mv^2/r
 - mgh
 - $1/2 mv^2$
 - mv
- Which of the substances is the lightest one?
 - Copper
 - Mercury
 - Aluminium
 - Lead
- Which of the substances is the lightest one?
 - Copper
 - Ice
 - Water
 - Mercury
- What will be the value of β for a solid for which α has a value of $2 \times 10^{-5} \text{ K}^{-1}$?
 - $2 \times 10^{-5} \text{ K}^{-1}$
 - $6 \times 10^{-5} \text{ K}^{-1}$
 - $8 \times 10^{-5} \text{ K}^{-1}$
 - $2 \times 10^{-15} \text{ K}^{-1}$

6. In gases heat is mainly transferred by:
- (A) molecular collision
 - (B) conduction
 - (C) convection
 - (D) radiation
7. Least count of vernier calipers is:
- (A) 0.01cm
 - (B) 0.01mm
 - (C) 0.1cm
 - (D) 0.001cm
8. Falcon can fly at a speed of:
- (A) 700 Km h⁻¹
 - (B) 200 Km h⁻¹
 - (C) 300 Km h⁻¹
 - (D) 400 Km h⁻¹
9. The force that oppose motion of a body:
- (A) Power
 - (B) Friction
 - (C) Work
 - (D) Momentum
10. The SI unit of weight is:
- (A) Newton
 - (B) Kilogram
 - (C) Nm
 - (D) Joule
11. The number of forces that can be added by head-to-tail rule:
- (A) Two
 - (B) Three
 - (C) Four

(D) Any number

12. Radius of earth is:

(A) 6.4×10^6 m

(B) 6.4×10^6 km

(C) 6×10^{24} m

(D) 6.6×10^7 m

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PART - I

2. Write short answers to any FIVE (5) questions. (5x2=10)

- (i) Define Plasma Physics and Geophysics.
- (ii) What is the difference between electronic balance and physical balance?
- (iii) How digital stop watch is used?
- (iv) Define circular motion and random motion.
- (v) What is the difference between uniform and variable speed?
- (vi) What is banking of road and what its advantage?
- (vii) What is the principle of cream separator and write its one use.
- (viii) Differentiate between action and re-action with the help of example.

3. Write short answers to any FIVE (5) questions. (5x2=10)

- (i) Define Like Parallel forces and moment arm.
- (ii) Define second condition for equilibrium. Write its mathematical equation.
- (iii) State Newton's law of gravitation.
- (iv) What is global positioning system?
- (v) What are artificial satellites?
- (vi) Define work. Write its mathematical equation.
- (vii) Define energy. Write its SI unit.
- (viii) Define power. Write its mathematical equation.

4. Write short answers to any FIVE (5) questions. (5x2=10)

- (i) Define stress and write its unit.
- (ii) State Hooke's law.
- (iii) Why does atmospheric pressure vary with height?
- (iv) What is difference between heat and temperature?
- (v) Define internal energy of a body.

- (vi) Define thermal conductivity.
- (vii) What is greenhouse effect?
- (viii) How does heat reach us from the sun?

PART - II

Note: Attempt any TWO questions.

(2x9=18)

- Q5. (a) Derive second equation of motion graphically. 4
- (b) A body has weight 20N. How much force is required to move it vertically upward with an acceleration of 2ms^{-2} . 5
- Q6. (a) Explain two major non-renewable sources of energy. 4
- (b) The steering of a car has a radius 16cm. Find the Torque produced by a couple of 50N. 5
- Q7. (a) Define evaporation. Explain any three factors which effect the rate of evaporation. 4
- (b) A wooden block measuring 40cm x 10cm x 5cm has a mass of 850g. Find the density of wood. 5

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Physics

Group - II

- SI unit of amount of substance is:
 - Gram
 - Kilogram
 - Newton
 - Mole
- $72\text{Km h}^{-1} = \underline{\hspace{2cm}}$:
 - 20 ms^{-1}
 - 10 ms^{-1}
 - 36 ms^{-1}
 - 200 ms^{-1}
- $F_c = \underline{\hspace{2cm}}$:
 - mv/r^2
 - mvr
 - mv^2/r
 - mv^2/r^2
- The value of coefficient of friction (μ_s) between tyre and wet road is:
 - 0.2
 - 0.6
 - 0.8
 - 0.9
- The value of $\text{Sin } 90^\circ$ is:
 - Zero
 - 1
 - 0.5
 - 0.707

6. The value of 'g' at the surface of moon is:
- (A) 1.62ms^{-2}
 - (B) 2.6ms^{-2}
 - (C) 1.69ms^{-2}
 - (D) 0.16ms^{-2}
7. If the velocity of a body becomes double then its kinetic energy:
- (A) remains constant
 - (B) becomes double
 - (C) becomes four times
 - (D) becomes half
8. The work done will be zero, when the angle between the force and distance is:
- (A) 45°
 - (B) 60°
 - (C) 90°
 - (D) 180°
9. The ratio between stress and tensile strain is called:
- (A) elastic modulus
 - (B) bulk modulus
 - (C) shear modulus
 - (D) young's modulus
10. Latent heat of fusion of ice is:
- (A) $2.36 \times 10^5\text{J kg}^{-1}$
 - (B) $3.36 \times 10^{-5}\text{J kg}^{-1}$
 - (C) $3.36 \times 10^5\text{J kg}^{-1}$
 - (D) $2.26 \times 10^5\text{J kg}^{-1}$
11. The coefficient of linear expansion and coefficient of volume expansion are related by equation:
- (A) $\alpha = 3\beta$
 - (B) $\beta = 2\alpha$

(C) $\beta = 4\alpha$

(D) $\beta = 3\alpha$

12. Best reflector of heat is:

(A) Dull black surface

(B) Coloured surface

(C) White surface

(D) Shining silvered surface

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Group - I

PART - I

2. Write short answers to any FIVE (5) questions. (5x2=10)

- (i) Write two important parts of vernier calipers.
- (ii) Express the following number in scientific notation: (i) 0.00045 (ii) 384000000
- (iii) Define prefixes and give an example.
- (iv) Differentiate between rotatory and vibratory motion.
- (v) Define random motion and write its example.
- (vi) Difference between mass and weight.
- (vii) Why friction opposes motion?
- (viii) Write two dis-advantages of friction.

3. Write short answers to any FIVE (5) questions. (5x2=10)

- (i) Define rigid body.
- (ii) What is meant by first condition of equilibrium?
- (iii) What is field force?
- (iv) What is distance from earth to moon and in how many days moon complete one cycle around the earth?
- (v) What is the distance of geo stationary satellite from earth and what is its speed with respect to earth?
- (vi) Define Potential energy and write its equation.
- (vii) What is meant by biomass energy?
- (viii) What is unit of power? Derive it.

4. Write short answers to any FIVE (5) questions. (5x2=10)

- (i) State Hooke's law.
- (ii) State Young's modulus.
- (iii) What is barometer and define strain.

- (iv) Differentiate heat and temperature.
- (v) Define evaporation.
- (vi) Define convection.
- (vii) Define radiation.
- (viii) What is greenhouse effect?

PART - II

Note: Attempt any TWO questions.

(2x9=18)

- Q5. (a) Derive second equation of motion with graph. $S = V_i t + \frac{1}{2} a t^2$ 4
- (b) A body has 5Kg is moving with a velocity of 10ms^{-1} Find the force required to stop it in 2 seconds. 5
- Q6. (a) Define potential energy and derive its mathematical relation. 4
- (b) The steering of a car has a radius 16cm. Find the torque produced by a couple of 50N. 5
- Q7. (a) Explain Celsius scale and Fahrenheit scale with the figures. 4
- (b) A cube of glass of 5cm side and mass 306g, has a cavity inside it, if the density of glass is 2.55gcm^{-3} . Find the volume of the cavity. 5