

Rawalpindi BOARD

GRADE 9

PHY

2018 GROUP 1

Section A-(MCQs)

i) What should be the approximate length of a glass tube to construct a water barometer? (Mark 1)

- A. 0.5 m
- B. 1 m
- C. 2.5 m
- D. 11 m

Answer:

- D. 11 m

ii) Which one of the following material has large specific heat (Mark 1)

- A. copper
- B. ice
- C. water
- D. mercury

Answer:

- C. water

iii) The unit of thermal conductivity is (Mark 1)

- A. wmk^{-1}
- B. $\text{wm}^{-1}\text{k}^{-1}$
- C. wm^{-1}k
- D. wk^{-1}

Answer:

- B. $\text{wm}^{-1}\text{k}^{-1}$

iv) Metals are a good conductor of heat due to (Mark 1)

- A. free electrons
- B. big size of their molecule
- C. small size of their molecules

D. rapid vibrations of their atoms

Answer:

A. free electrons

v) The number of base units in SI is

(Mark 1)

A. 3

B. 6

C. 7

D. 9

Answer:

C. 7

vi) The amount of substance in terms of numbers is measured in

(Mark 1)

A. gram

B. kilogram

C. newton

D. mole

Answer:

D. mole

vii) A train is moving at a speed of 36kmh^{-1} . Its speed expressed in ms^{-1} is

(Mark 1)

A. 10ms^{-1}

B. 20ms^{-1}

C. 25ms^{-1}

D. 30ms^{-1}

Answer:

A. 10ms^{-1}

viii) Which one of the following is the unit of momentum?

(Mark 1)

A. Nm

B. kgms^{-1}

C. Ns

D. Ns^{-1}

Answer:

C. Ns

ix) A force of 10 N is making an angle of 30° with the x-axis. Its horizontal component will be

(Mark 1)

A. 4 N

B. 5 N

C. 7 N

D. 8.7 N

Answer:

D. 8.7 N

x) The value of g on the moon's surface is 1.6 ms^{-1} . What will be the weight of a 100 kg body on the surface of the moon? (Mark 1)

A. 100 N

B. 160 N

C. 1000 N

D. 1600 N

Answer:

B. 160 N

xi) The value of gravitational constant 'G' is (Mark 1)

A. $6.67 \times 10^{-9} \text{ Nm}^2\text{Kg}^{-2}$

B. $6.67 \times 10^{-10} \text{ Nm}^2\text{Kg}^{-2}$

C. $6.67 \times 10^{-11} \text{ Nm}^2\text{Kg}^{-2}$

D. $6.67 \times 10^{-12} \text{ Nm}^2\text{Kg}^{-2}$

Answer:

C. $6.67 \times 10^{-11} \text{ Nm}^2\text{Kg}^{-2}$

xii) The kinetic energy of the body of mass 2 kg is 25J. Its speed is (Mark 1)

A. 5 ms^{-1}

B. 12.5 ms^{-1}

C. 25 ms^{-1}

D. 50 ms^{-1}

Answer:

A. 5 ms^{-1}

Q.2 i) What is meant by scientific notation? (Marks 2)

Q.2 ii) When the zero error of the screw gauge will be negative?
(Marks 2)

Q.2 iii) Define Base Quantities. (Marks 2)

Q.2 iv) What is meant by graph? (Marks 2)

Q.2 v) What is the difference between distance and displacement?
(Marks 2)

Q.2 vi) What is the difference between positive and negative acceleration?
(Marks 2)

Q.2 vii) Define mass and weight. (Marks 2)

Q.2 viii) Write two disadvantages of friction. (Marks 2)

- Q.3 i) Define the resolution of forces. (Marks 2)
- Q.3 ii) What is the difference between torque and couple? (Marks 2)
- Q.3 iii) State the principle of moments. (Marks 2)
- Q.3 iv) What is the difference between 'g' and 'G'? (Marks 2)
- Q.3 v) Define gravitational force. (Marks 2)
- Q.3 vi) What is a geostationary satellite? (Marks 2)
- Q.3 vii) Define potential energy and write its formula. (Marks 2)
- Q.3 viii) What is work done in lifting a brick of mass 2 kg through a height of 5 m above the ground? (Marks 2)

- Q.4 i) Define density and its formula. (Marks 2)
- Q.4 ii) State Pascal's law. (Marks 2)
- Q.4 iii) State Archimedes' principle. (Marks 2)
- Q.4 iv) Differentiate between temperature and heat. (Marks 2)

Q.4 v) Convert 50 °C on centigrade scale into Fahrenheit scale.

(Marks 2)

- Q.4 vi) Why are the birds called expert thermal climber. (Marks 2)
- Q.4 vii) Define radiation. (Marks 2)
- Q.4 viii) - Differentiate between land and sea breeze. (Marks 2)

Q.5 a) State Newton's third law of motion and state it with an example. (Marks 4)

Q.5 b) Find the retardation produced when a car moving at a velocity of 30 meters per second slow down uniformly to 15 ms⁻¹ in 5 seconds. (Marks 5)

Q.6 a) Write names of three states of equilibrium and define them. (Marks 4)

Q.6 b) A girl carries a 10 kg upstairs to a height of 18 steps, each 20 cm high. Calculate the amount of work she has done to carry the bag.

Take (g=10 ms⁻¹) (Marks 5)

Q.7 a) Explain the working of hydraulic press on the basis of Pascal's law. (Marks 4)

Q.7 b) How much heat is required to change 100 g of water at 100 °C into steam while latent heat of vaporization of water is

2.26 x10⁶ Jkg⁻¹

(Marks 5)

Rawalpindi BOARD

GRADE 9

PHY

2018 GROUP 2

Section A-(MCQs)

i) In gases heat is mainly transferred by (Mark 1)

- A. molecular collision
- B. conduction
- C. convection
- D. radiation

Answer:

C. convection

ii) Rate of flow of heat is (Mark 1)

- A. Q^2t
- B. Q/t
- C. Qt
- D. Q/t^2

Answer:

B. Q/t

iii) Which one of the following is not a derived unit (Mark 1)

- A. pascal
- B. kilogram
- C. newton
- D. watt

Answer:

B. kilogram

iv) An interval of $200 \mu\text{s}$ is equivalent to (Mark 1)

- A. 0.2 s
- B. 0.02 s
- C. 2×10^{-4} s
- D. 2×10^{-6} s

Answer:

- C. 2×10^{-4} s

v) A ball is thrown vertically upwards. Its velocity at the highest point is

(Mark 1)

- A. -10 ms^{-1}
- B. zero
- C. 10 ms^{-1}
- D. none of these

Answer:

- B. zero

vi) A boy jumps out of a moving bus. There is a danger for him to fall.

(Mark 1)

- A. towards the moving bus
- B. away from the bus
- C. in the direction of motion
- D. opposite to the direction of motion

Answer:

- C. in the direction of motion

vii) Racing cars are made stable by

(Mark 1)

- A. lowering the centre of gravity
- B. increasing the centre of gravity
- C. making the car box shape
- D. none of the above

Answer:

- A. lowering the centre of gravity

viii) The orbital speed of a low orbit satellite is

(Mark 1)

- A. zero
- B. 8 kms^{-1}
- C. 800 kms^{-1}
- D. 8000 kms^{-1}

Answer:

- B. 8 kms^{-1}

ix) The mass of the earth is

(Mark 1)

- A. 6×10^{24} g
- B. 6×10^{24} kg

- C. 6×10^{22} g
- D. 6×10^{22} kg

Answer:

- B. 6×10^{24} kg

x) Rate of doing work is called

(Mark 1)

- A. energy
- B. torque
- C. power
- D. momentum

Answer:

- C. power

xi) Which substance is the lightest one

(Mark 1)

- A. gold
- B. silver
- C. aluminium
- D. copper

Answer:

- C. aluminium

xii) Which of the following material has a large value of temperature coefficient of linear expansion?

(Mark 1)

- A. aluminium
- B. gold
- C. brass
- D. steel

Answer:

- A. aluminium

Q.2 i) Define least count.

(Marks 2)

Q.2 ii) Define Plasma Physics and Geo-Physics

(Marks 2)

Q.2 iii) Differentiate between base and derived quantities.

(Marks 2)

Q.2 iv) Differentiate between speed and velocity

(Marks 2)

Q.2 v) Define vibratory motion and give an example

(Marks 2)

Q.2 vi) A player covers 80 m distance in 10 seconds. Find its average speed.

(Marks 2)

Q.2 vii) Differentiate between mass and weight.

(Marks 2)

Q.2 viii) Write two disadvantages of friction.

(Marks 2)

Q.3 i) Differentiate between like and unlike parallel forces.

(Marks 2)

- Q.3 ii) State the principle of moments. (Marks 2)
- Q.3 iii) The weight of a body is 147 N. What is its mass? (take $g=10 \text{ ms}^{-1}$) (Marks 2)
- Q.3 iv) State law of gravitation. (Marks 2)
- Q.3 v) What are the artificial satellites? (Marks 2)
- Q.3 vi) What is meant by a global positioning system? (Marks 2)
- Q.3 vii) Define work and write its unit. (Marks 2)
- Q.3 viii) What is the second name of the solar cell and how is it made? (Marks 2)
- Q.4 i) What is the application of Pascal's law? (Marks 2)
- Q.4 ii) Define Archimedes' principle. (Marks 2)
- Q.4 iii) What is meant by elasticity? (Marks 2)
- Q.4 iv) Define the latent heat of fusion. (Marks 2)
- Q.4 v) What is meant by internal energy of a body. (Marks 2)
- Q.4 vi) Define sea breeze. (Marks 2)
- Q.4 vii) What is the cause to remain a glider in the air? (Marks 2)
- Q.4 viii) What is meant by the transfer of heat? (Marks 2)
- Q.5 a) Describe four method of reducing friction. (Marks 4)
- Q.5 b) A car has a velocity 10ms^{-1} . It acceleration at 0.2 ms^{-2} for half a minute. Find the distance traveled during this time. Also, find its final velocity. (Marks 5)
- Q.6 a) A force 'F' makes an angle of theta with the x-axis. Determine the magnitude of its rectangular components. (Marks 4)
- Q.6 b) A force of 200 N acts on a body of mass 20 kg. The force accelerates the body from rest until it attains a velocity of 50 ms^{-1} . Through what distance does the force act? (Marks 5)
- Q.7 a) What is upthrust? Explain the principle of floatation. (Marks 4)
- Q.7 b) A brass rod is 1 metre long at 0°C . Find its length at 30°C (coefficient of linear expansion of brass is $1.9 \times 10^{-5} \text{ k}^{-1}$) (Marks 5)

