

CHINIOT ISLAMIA PUBLIC SCHOOL AND COLLEGE

1ST QUARTERLY TEST

Chiniot Islamia Public School
First Quartely Test - OI Physics

Name: _____	Section: _____	Roll No: _____
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Duration: 2 Hours

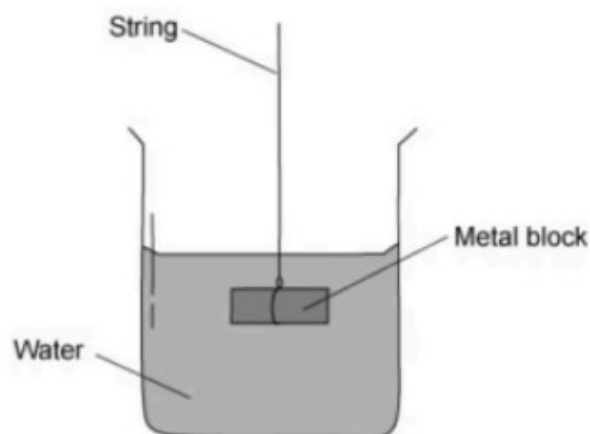
Total Marks: 100

Q1 .

1. Which of the following statements about convection is correct? Warm air rises because:

- | | |
|--|--|
| ★ (a) The air molecules expand and become less dense. | ★ (b) The air molecules move further apart, making the air less dense. |
| ★ (c) The air molecules contract, making the air less dense. | ★ (d) The air molecules move closer together, making the air less dense. |

2. A small metal block is suspended under the surface of a beaker of water by a string. The metal block experiences a pressure exerted by the liquid.



What would increase the pressure exerted on the metal block?

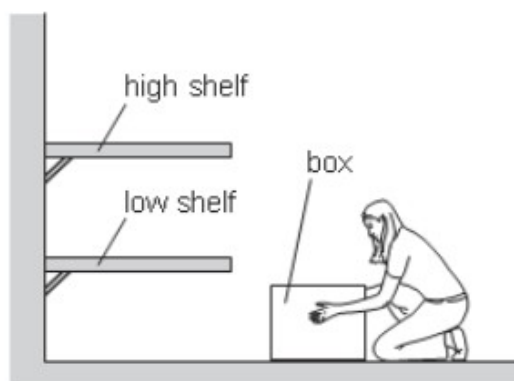
- ★ (a) increasing the surface area of the stone.
 - ★ (b) using a liquid with a lower density.
 - ★ (c) increasing the mass of the metal block.
 - ★ (d) lowering the metal block deeper into the liquid.
3. Which of these is the correct definition for momentum and its unit?

	Definition	Unit
A	$p = m \div v$	N/m
B	$v = p \times m$	kgm/s
C	$v = p \div m$	kgm/s
D	$p = m \times v$	N/kg

4. A sealed yet empty (except for air) plastic drinks bottle is left outside in the sunshine on a warm day. Which row of the table correctly describes what happens to the average speed of the air molecules, and to the pressure inside the bottle?

	Average speed of particles	Pressure inside bottle
A	increases	increases
B	increases	decreases
C	decreases	increases
D	decreases	decreases

5. 3 A person in a factory has to lift a box on to a shelf.



Which action involves the person doing the least amount of work?

- ★ (a) lifting the box quickly to the high shelf
- ★ (b) lifting the box slowly to the high shelf
- ★ (c) lifting the box to the low shelf first then lifting it to the high shelf
- ★ (d) lifting the box to the low shelf instead of to the high shelf

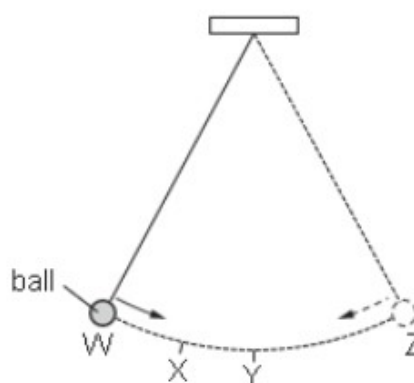
6. A sealed piston is used to expand a gas. No gas escapes during the process.



What happens to both the density of the gas and to its pressure when it is expanded in this way?

	Density	Pressure
A	stays the same	stays the same
B	increases	decreases
C	decreases	stays the same
D	decreases	decreases

7. The diagram shows a ball hanging on a string. The ball swings from point W to



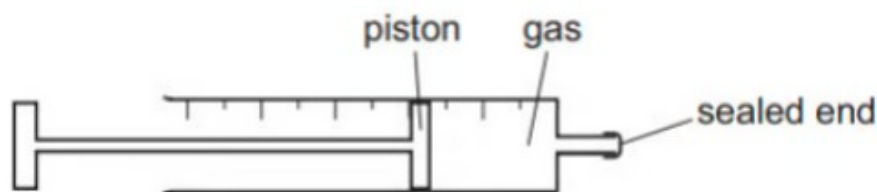
point Z and back to point W.

Which statement about the ball is correct?

Which

- ★ (a) The kinetic energy of the ball is greatest at point W.
- ★ (b) The kinetic energy of the ball is greatest at point X.
- ★ (c) The kinetic energy of the ball is greatest at point Y.
- ★ (d) The kinetic energy of the ball is the same at all points of the swing.

8. A sealed gas syringe contains a fixed mass of gas.



The piston is moved and the volume of the gas doubles. The temperature of the gas does not change. What happens to the pressure of the gas?

- ★ (a) halves
 - ★ (b) no change
 - ★ (c) doubles
 - ★ (d) triples
9. A stopwatch is used to time a runner in a race. The diagrams show the stopwatch at the start and at the end of a lap of the race.



start of lap



end of lap

How long did the runner take to finish the lap of the race?

- ★ (a) 50.00 seconds
 - ★ (b) 50.10 seconds
 - ★ (c) 90.00 seconds
 - ★ (d) 100.10 seconds
10. Which energy source is renewable and reliably available at all times? A A coal B geothermal c nuclear D wind

11. A cup contains hot liquid. Some of the liquid evaporates. What happens to the mass and what happens to the weight of the liquid in the cup?

	mass	weight
A	decreases	decreases
B	decreases	stays the same
C	stays the same	decreases
D	stays the same	stays the same

12. Which statement describes what happens as ice at 0 °C starts to melt to become water?

★ (a) Energy is absorbed and temperature remain constant.

★ (b) Energy is absorbed and the temperature rises.

★ (c) Energy is released and the temperature remains constant.

★ (d) Energy is released and the temperature rises.

13. 1 A large stone is dropped from a bridge into a river. Air resistance can be ignored. Which row describes the acceleration and the speed of the stone as it falls?

	acceleration of the stone	speed of the stone
A	constant	constant
B	constant	increasing
C	increasing	constant
D	increasing	increasing

14. A student is told to measure the density of a liquid and also of a large cube of metal. Which pieces of equipment are sufficient to be able to take the measurements needed?

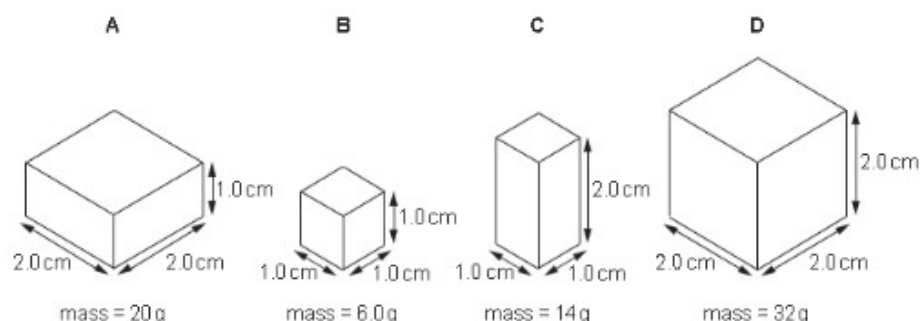
★ (a) balance, measuring cylinder and ruler.

★ (b) balance and thermometer.

★ (c) measuring cylinder and ruler.

★ (d) measuring cylinder, ruler and thermometer.

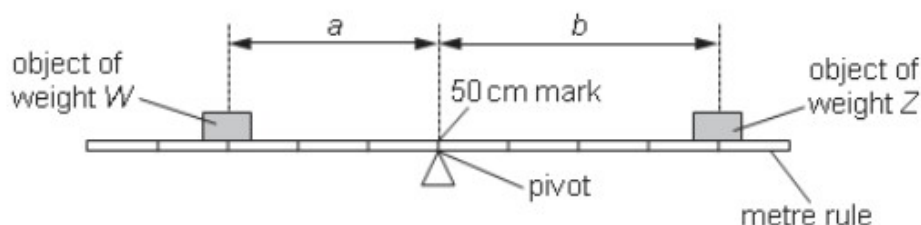
15. The diagrams show the dimensions and masses of four regular solid objects. The objects are made from different metals. Which metal has the greatest density?



16. During a Go Karting race, a car does 8 laps of a 300 m course. It takes 4.0 minutes to complete the race. What was the average speed of the Go Kart?

- ★ (a) 75 m/s ★ (b) 10 m/s
★ (c) 1.25 m/s ★ (d) 600 m/s

17. The diagram shows an object of weight W and an object of weight Z balanced on a uniform metre rule.



Which

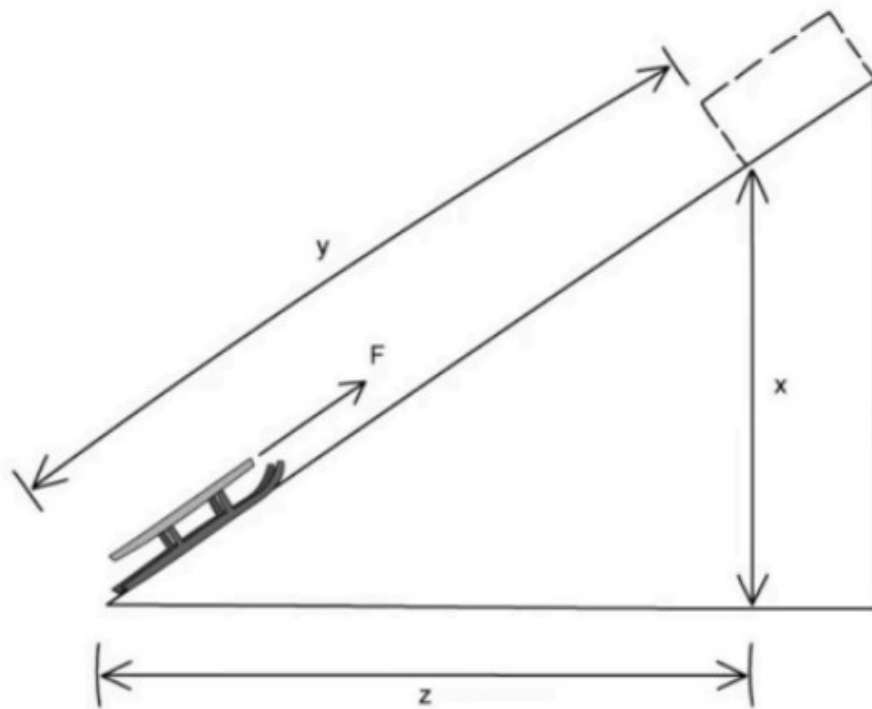
- A $\frac{W}{a} = \frac{Z}{b}$
- B $W \times Z = a \times b$
- C $W \times a = Z \times b$
- D $W \times (a + b) = Z$

equation relating to W , Z , a and b is correct?

18. A car travels at an average speed of 60 km / h for 15 minutes. How far does the car travel in this time?

- ★ (a) 4.0 km ★ (b) 15 km
- ★ (c) 240 km ★ (d) 900 km

19. A sledge is pushed up a hill with a force, F .



The work done on the sledge depends on the force applied and on a distance moved. Which distance?

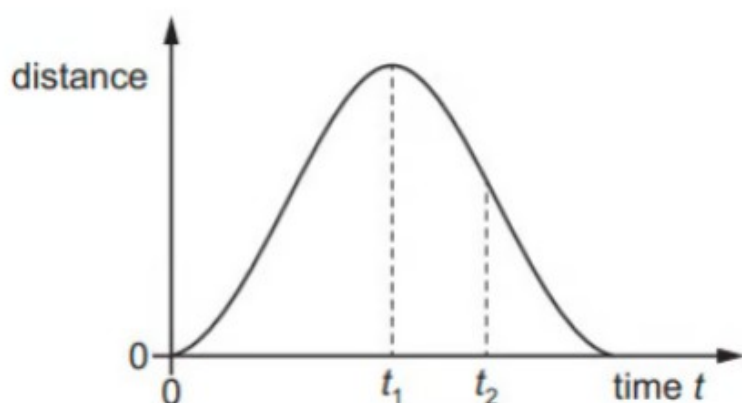
★ (a) x

★ (b) y

★ (c) z

★ (d) $x + z$

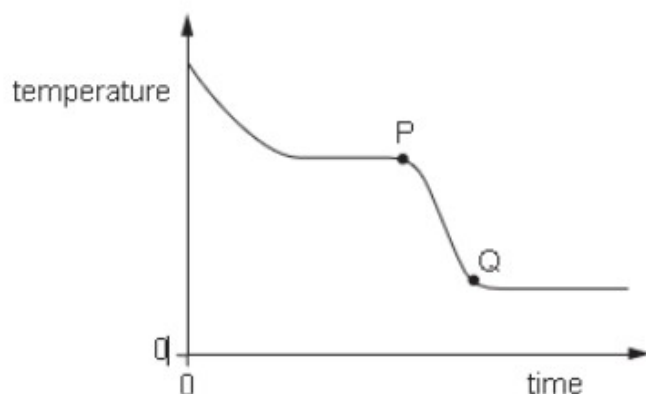
20. A train sets off from a station at time $t = 0$. The graph shows how the distance between the train and the station varies with time.



Which statement about the movement of the train between time t_1 and t_2 is correct?

- | | |
|---|---|
| ★ (a) Its speed is decreasing and it is moving away from the station. | ★ (b) Its speed is decreasing and it is moving towards the station. |
| ★ (c) Its speed is increasing and it is moving away from the station. | ★ (d) Its speed is increasing and it is moving towards the station. |
21. A planet orbits a star at a constant speed in a circular orbit. Which of the statements below, about the force needed to maintain this motion, is correct?
- | | |
|---|--|
| ★ (a) No force is required | ★ (b) The force is directed away from the centre of the circle |
| ★ (c) The force is directed in the direction the planet is travelling | ★ (d) The force is directed towards the centre of the circle |

22. A substance loses thermal energy (heat) to the surroundings at a steady rate. The graph shows how the temperature of the substance changes with time.

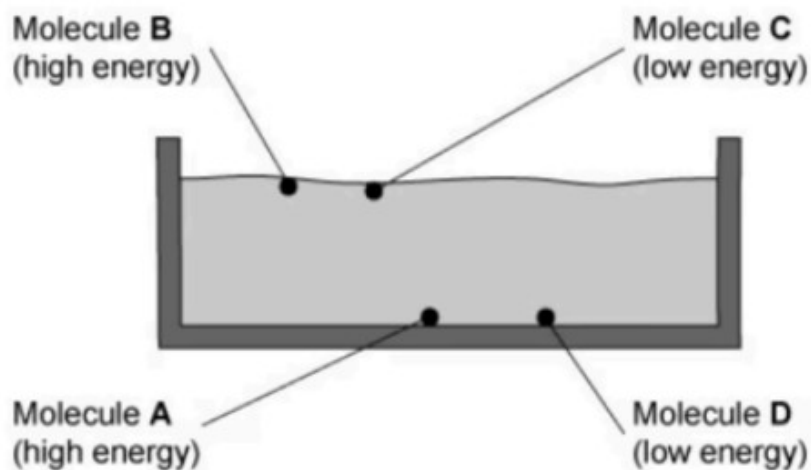


What could the portion

PQ of the graph represent?

- | | |
|----------------------|--------------------------|
| ★ (a) gas condensing | ★ (b) gas cooling |
| ★ (c) liquid cooling | ★ (d) liquid solidifying |
23. Which quantity gives the thermal capacity of a beaker?
- | | |
|--|---|
| ★ (a) the thermal energy required to change the state of the beaker at constant temperature. | ★ (b) the thermal energy required to raise the temperature of the beaker by 1°C . |
| ★ (c) the total mass of hot liquid that the beaker can hold. | ★ (d) the total volume of hot liquid that the beaker can hold. |

24. The diagram shows four water molecules in a swimming pool. It also shows how much energy each molecule has. Which of the water molecules is most likely to evaporate from the liquid?



★ (a) Molecule A

★ (b) Molecule B

★ (c) Molecule C

★ (d) Molecule D