

CHINIOT ISLAMIA PUBLIC SCHOOL AND COLLEGE

1ST QUARTERLY TEST

**Chiniot Islamia Public School
First Quartely Test - OI Physics**

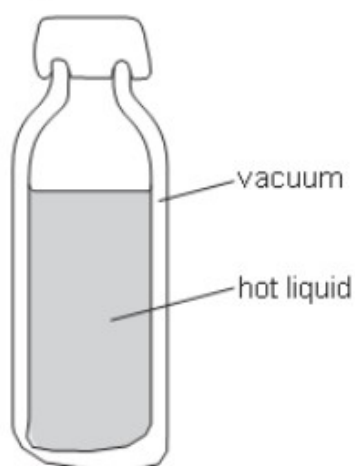
Name: _____	Section: _____	Roll No: _____
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Duration: 2 Hours

Total Marks: 100

Q1 .

1. The diagram shows a vacuum flask used to keep liquid hot.



How does thermal energy pass through the vacuum?

- | | |
|-----------------------|----------------------------------|
| ★ (a) Conduction only | ★ (b) Convection only |
| ★ (c) Radiation | ★ (d) Conduction and convection. |

2. Two cars sit side by side, a black car and a white car. It is Summer.



During the day both cars absorb infrared radiation from the Sun, and during the night, both cars lose energy by emitting infrared radiation. Which car heats up more quickly during the day, and which car cools down more quickly at night?

3. A student wishes to find the volume of a small, irregularly-shaped stone.

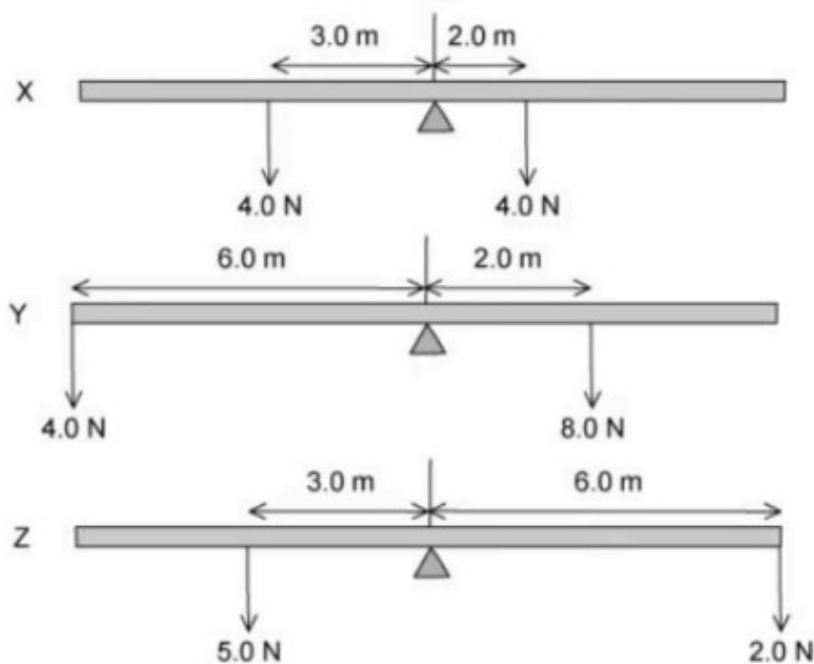


A ruler and a measuring cylinder containing some water are available. Which apparatus is needed?

- ★ (a) neither the ruler nor the measuring cylinder ★ (b) the measuring cylinder only
- ★ (c) the ruler and the measuring cylinder ★ (d) the ruler only
4. Which row correctly matches an energy store with an example of that store?

	Energy Store	Example
A	kinetic	a car moving at 70 km / h
B	elastic	a box sitting high on a shelf
C	magnetic	compression of springs in a car's suspension
D	chemical	the nuclei of uranium atoms

5. The diagrams below show three beams, each is pivoted at the centre. Each beam also has two forces acting on it, as shown.

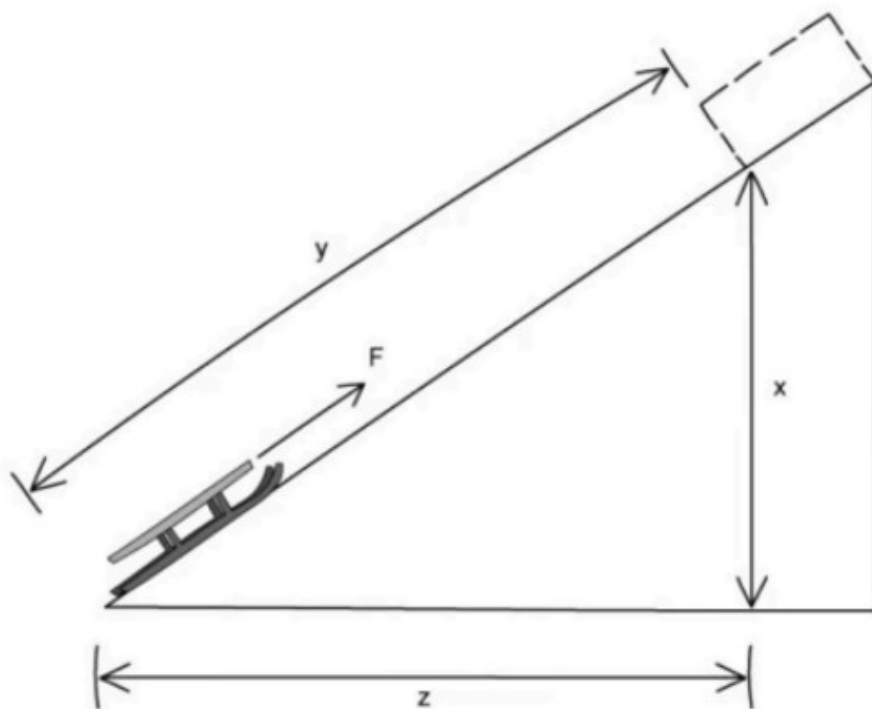


Which of the beams

will rotate clockwise?

- ★ (a) X and Y
 - ★ (b) Y and Z
 - ★ (c) Z only
 - ★ (d) None of them
6. 1 A cotton sheet is ironed with a hot electric iron. How is energy transferred through the metal base of the iron to the sheet?
- ★ (a) by conduction only
 - ★ (b) by convection only
 - ★ (c) by radiation only
 - ★ (d) by convection and radiation only.
7. Which statement describes what happens as ice at 0°C starts to melt to become water?
- ★ (a) Energy is absorbed and the 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.

8. 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

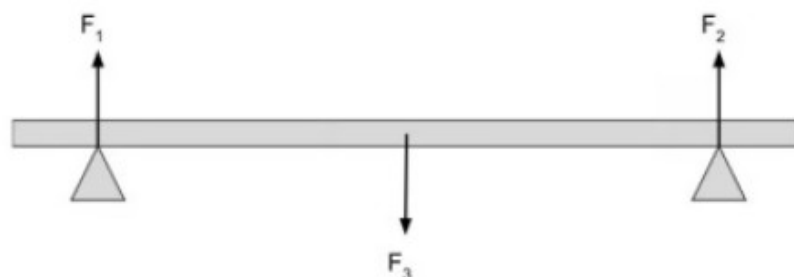
★ (d) $x + z$

9. 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

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

falls?

10. A plank rests on two supports, as shown in the diagram. The plank is in equilibrium. Three forces act on the plank.



Which statement is true?

- ★ (a) The upward force is larger than the downward force.
 - ★ (b) The resultant force on the beam is zero and the resultant moment on the beam is zero.
 - ★ (c) The resultant moment on the beam is zero, but the resultant force is not zero.
 - ★ (d) All three forces are equal in size
11. A sealed piston is used to expand a gas. No gas escapes during the process.



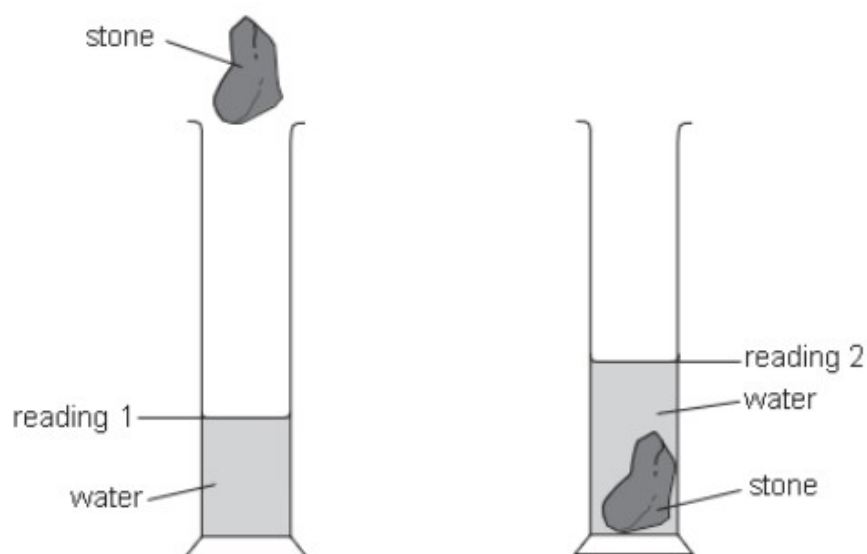
What happens to both the density of the gas and to its pressure when it is expanded

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

in this way?

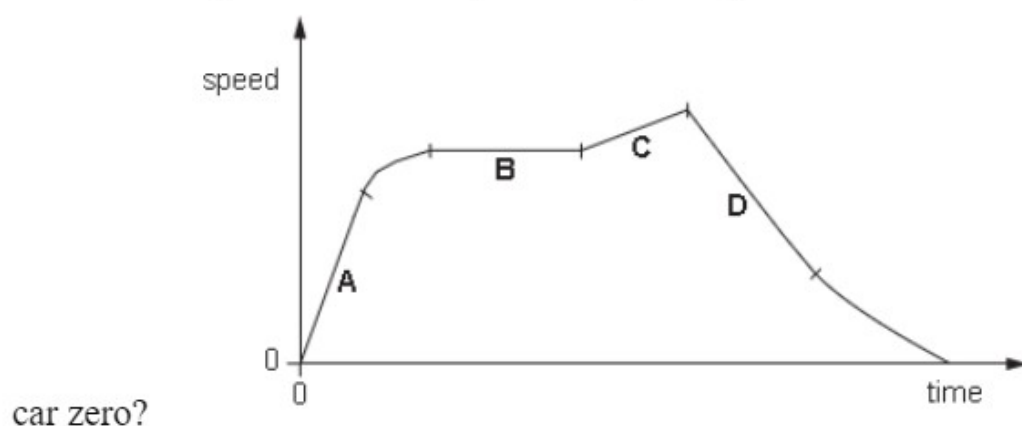
12. 1 A train begins a journey from a station and travels 60 km in a time of 20 minutes. What is the average speed of the train?
- ★ (a) 3.0 m / s
 - ★ (b) 5.0 m / s
 - ★ (c) 50 m / s
 - ★ (d) 60 m / s

13. A student wishes to determine the density of an irregularly-shaped stone. First he finds the mass of the stone. Next he lowers the stone into a measuring cylinder containing water. The diagrams show the measuring cylinder before and after the stone is lowered into it.



How should the student calculate the density of the stone?

- ★ (a) mass of stone $\times$ reading 2
- ★ (b) mass of stone $\times$ (reading 2 – reading 1)
- ★ (c) mass of stone $\div$ reading 2
- ★ (d) mass of stone $\div$ (reading 2 – reading 1)
14. 1 A car travels along a straight road. The speed-time graph for this journey is shown. During which labelled part of the journey is the resultant force on the

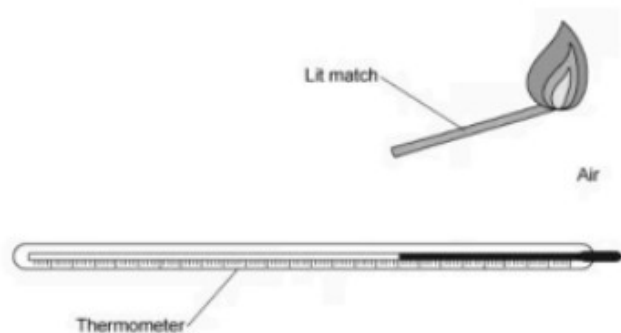


15. The table gives four combinations of the force applied to a surface and the area over which it acts. Which row gives the smallest pressure exerted on the

	Force / N	Area / m ²
A	40	0.5
B	40	2.0
C	80	0.5
D	80	2.0

surface?

16. A lit match is placed above a thermometer.



Which row in the table shows how the thermal energy from the lit match reaches the thermometer?

	Convection	Conduction	Radiation
A	yes	yes	yes
B	yes	yes	no
C	no	yes	yes
D	no	no	yes

17. Which process involves convection?

★ (a) bread toasting under a grill

★ (b) energy from the Sun warming a road surface

★ (c) hot air rising to the top of a cool room

★ (d) thermal energy transfer through a copper bar

18. A small cylinder is rolled along a ruler and completes two full turns as shown in the diagram.

19. A car travels along a clear 10.0 km section of motorway in 6.0 minutes. It then drives through 3.0 km of roadworks in 3.0 minutes. Which calculation will

A. $\frac{3.0}{3.0} = 1.00 \text{ km/min}$

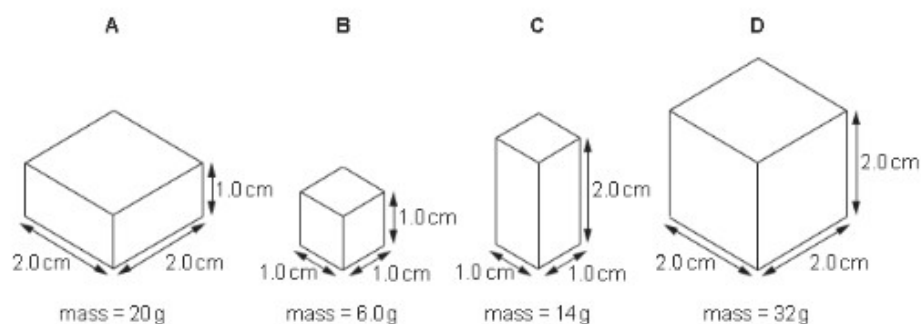
B. $\frac{10.0}{6.0} = 1.67 \text{ km/min}$

C. $1.67 + 1.00 = 2.67 \text{ km/min}$

D. $\frac{13.0}{9.0} = 1.44 \text{ km/min}$

give the correct average speed for the journey?

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

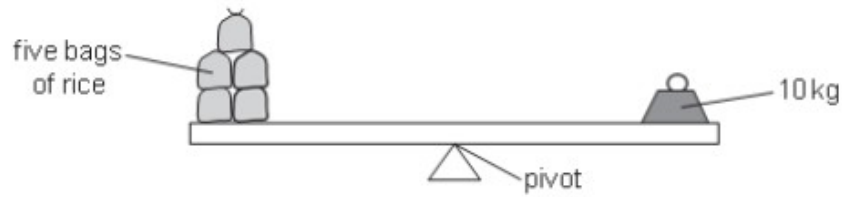


density?

21. 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

22. Five identical bags of rice are balanced on a uniform beam by an object of mass 10 kg.



Two more identical bags of rice are added to the other five. The average position of the bags on the beam does not change. What mass now balances the bags?

★ (a) 3.5 kg

★ (b) 7.0 kg

★ (c) 12 kg

★ (d) 14 kg