

CHINIOT ISLAMIA PUBLIC SCHOOL AND COLLEGE

1ST QUARTERLY TEST

testing - OI Physics

Name: _____

Section: _____

Roll No: _____

Duration: 2 Hour

Total Marks: 100

Name: _____

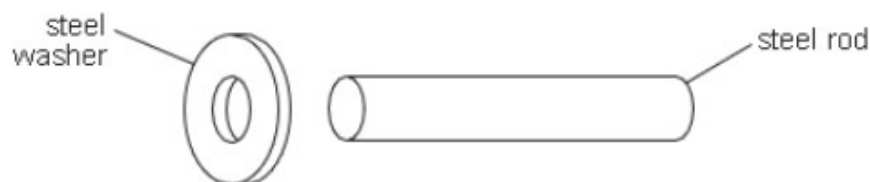
Section: _____

Q1 .

1. Which of the following statements defines the specific heat capacity of a substance?

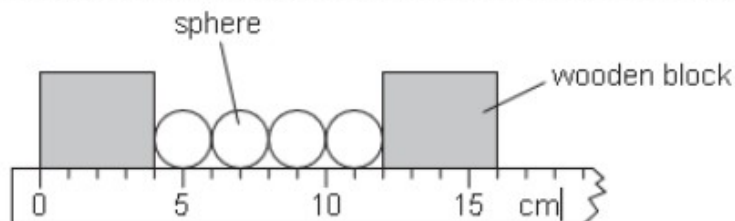
- ★ (a) The energy required to raise the temperature of 1 kg of a substance by 1°C .
- ★ (b) The energy per $^{\circ}\text{C}$ required to raise the temperature of a substance.
- ★ (c) The increase in length of 1kg of a substance when its temperature is increased by 1°C .
- ★ (d) The energy required to change 1kg of a substance from liquid to a gas.

2. An engineer wants to fix a steel washer on to a steel rod. The rod is just too big to fit into the hole of the washer.



How can the engineer fit the washer on to the rod?

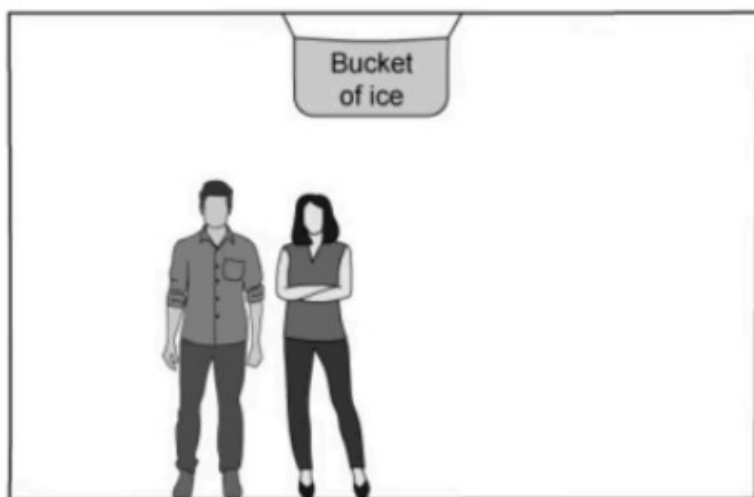
- ★ (a) Cool the washer and then place it over the rod.
 - ★ (b) Cool the washer and rod to the same temperature and then push them together.
 - ★ (c) Heat the rod and then place it in the hole in the washer.
 - ★ (d) Heat the washer and then place it over the rod.
3. The diagram shows four identical spheres placed between two wooden blocks on a ruler.



What is the diameter of one sphere?

- ★ (a) 1.0 cm
- ★ (b) 2.0 cm
- ★ (c) 3.0 cm
- ★ (d) 4.0 cm

4. The diagram shows a bucket of ice which is hanging from the ceiling of a room as a makeshift air-conditioner. This is a cheaper, less



effective means of cooling the room.

The ice cools

the air next to it. What happens to the cold air and why?

5. An object of mass 50 kg accelerates from a velocity of 2.0 m/s to a velocity of 10 m/s in the same direction. What is the impulse provided to cause this acceleration?

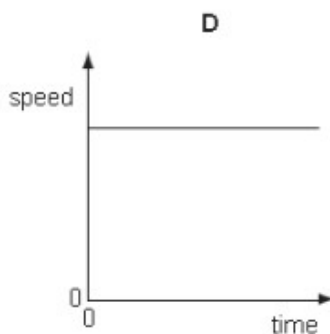
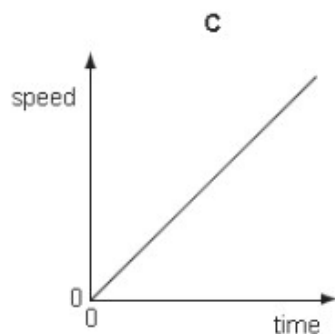
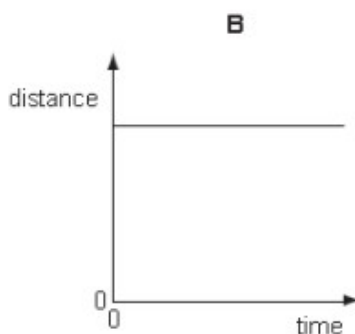
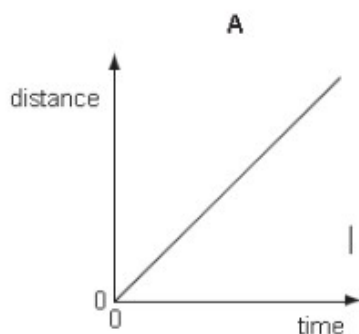
★ (a) 250 N s

★ (b) 400 N s

★ (c) 850 N s

★ (d) 2500 N s

6. 1 Two distance-time graphs and two speed-time graphs are shown. Which graph represents an object that is at rest?



7. When the temperature of a substance increases, there is also an increase in

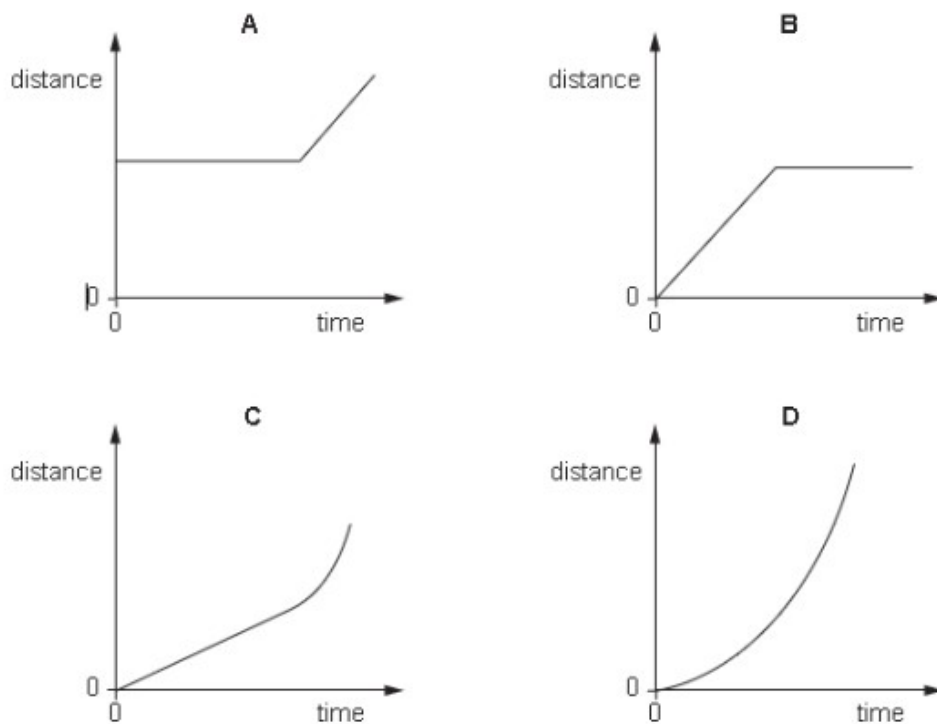
★ (a) gravitational potential energy.

★ (b) specific heat capacity.

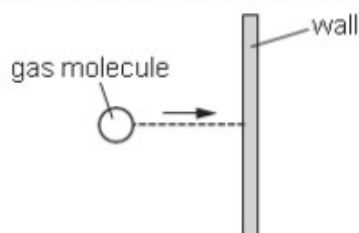
★ (c) mass.

★ (d) internal energy.

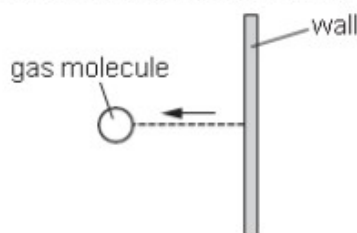
8. An object moves at a constant speed for some time, then begins to accelerate. Which distance-time graph shows this motion?



9. A gas molecule strikes the wall of a container. The molecule rebounds with the same speed.



before hitting the wall



after hitting the wall

What happens to the

kinetic energy and what happens to the momentum of the molecule? kinetic energy momentum

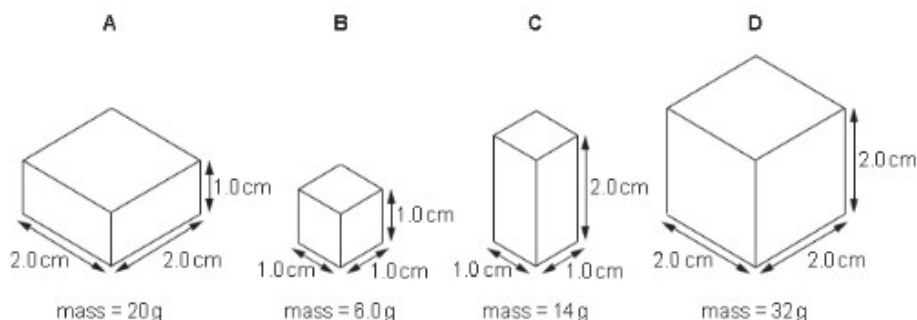
★ (a) changes changes

★ (b) changes stays the same

★ (c) stays the same changes

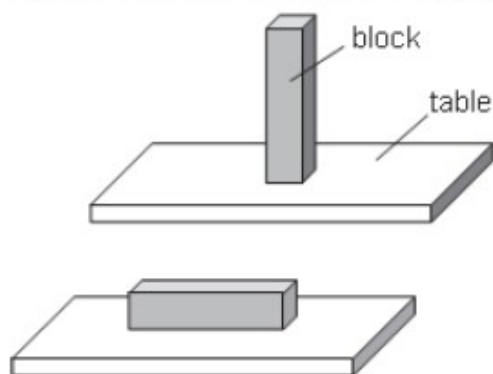
★ (d) stays the same stays the same

10. 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?

11. A block with flat, rectangular sides rests on a table.



The block is now turned so that it rests with its largest side on the table.



How has this change affected the force and the pressure exerted by the block

on the table?

12. 1 A large stone is dropped from a bridge into a river. Air resistance can be ignored. Which row describes the acceleration and the

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

speed of the stone as it falls?

13. A liquid is evaporating. The liquid is not boiling. Which statement about the liquid is correct?

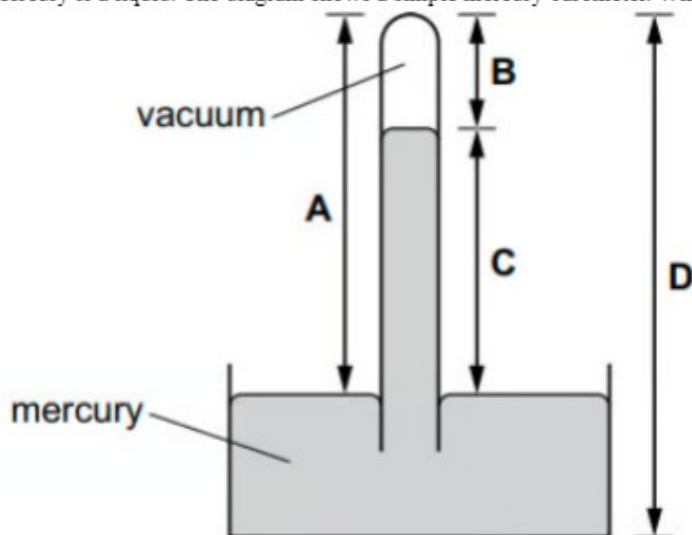
★ (a) Any molecule can escape, and from any part of the liquid.

★ (b) Any molecule can escape, but only from the liquid surface.

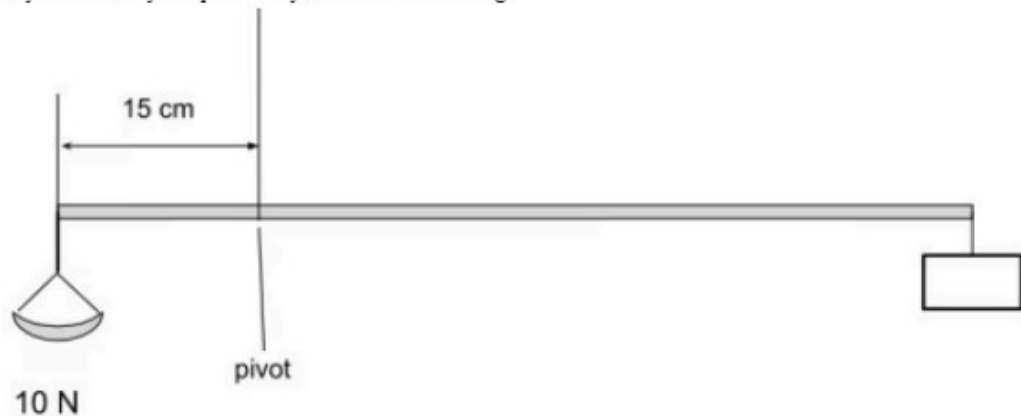
★ (c) Only molecules with enough energy can escape, and only from the liquid surface.

★ (d) Only molecules with enough energy can escape, but from any part of the liquid.

14. Mercury is a liquid. The diagram shows a simple mercury barometer. Which height is a measure of the atmospheric pressure?



15. A 'yardarm' is a stick, hung from a string, that is used to weigh goods. Goods are placed in the pan on the left, and weights are added to the box on the right side until it balances. The weight of the pan and the box are such that the weight of the yardarm itself is entirely balanced by the pan. The yardarm is 65 cm long.



How many 0.5 N

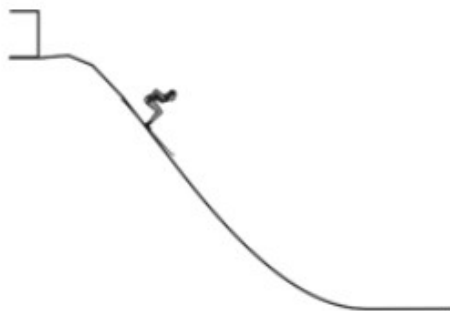
weights need to be added to the box in order to balance the yardarm?

- ★ (a) 2 ★ (b) 3
★ (c) 6 ★ (d) 12

16. Electrical energy may be obtained from nuclear fission. In which order is the energy transferred in this process?

- ★ (a) nuclear fuel → generator → reactor and boiler → turbines
- ★ (b) nuclear fuel → generator → turbines → reactor and boiler
- ★ (c) nuclear fuel → reactor and boiler → generator → turbines
- ★ (d) nuclear fuel → reactor and boiler → turbines → generator

17. 1 A skier walks from the bottom of a ski slope to the top and gains 10 000 J of gravitational potential energy. She skis down the

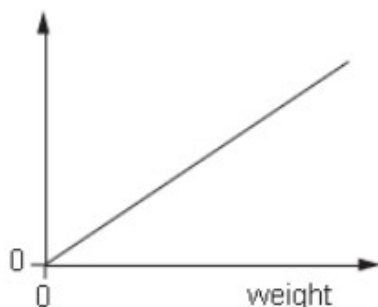


slope. At the bottom of the slope, her kinetic energy is 2000 J.

How much energy is dissipated in overcoming friction and air resistance as the skier moves down the slope?

- ★ (a) 2000 J ★ (b) 8000 J
- ★ (c) 10 000 J ★ (d) 12 000 J

18. A student adds weights to an elastic cord. He measures the length of the cord for each weight. He then plots a graph from the results.

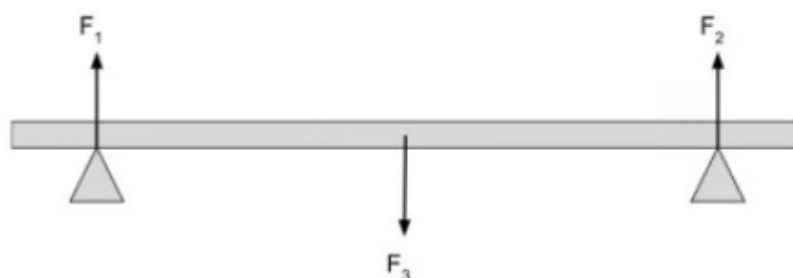


as shown.

What has he plotted on the vertical axis?

- ★ (a) measured length ★ (b) original length
- ★ (c) (measured length + original length) ★ (d) (measured length – original length)

19. 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.
20. 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.

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

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

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

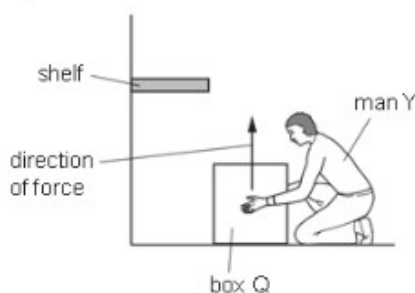
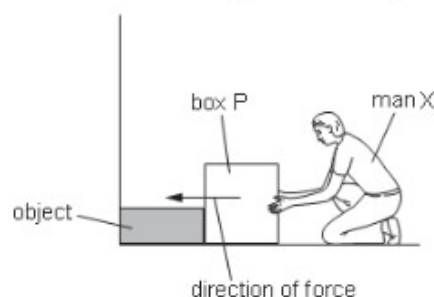
D. $\frac{13.0}{9.0} = 1.44 \text{ km/min}$

Which calculation will give the correct average speed for the journey?

21. 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

22. 3 In a factory, two men X and Y try to move identical heavy boxes P and Q. Man X tries to push box P along the floor. The box does not move because an object is in the way. Man Y lifts box Q from the floor onto a shelf.



Which man does the

most work on the box, and which box gains the most energy?

	man doing most work	box gaining most energy
A	X	P
B	X	Q
C	Y	P
D	Y	Q

23. Padded dashboards in cars are safer in an accident than non-padded ones because a passenger hitting the dashboard would experience

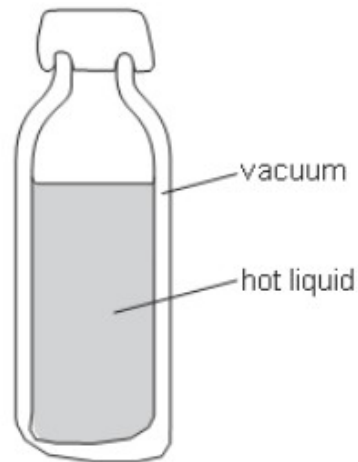
★ (a) Lengthened time of contact

★ (b) Shorter time of contact

★ (c) Decreased impulse

★ (d) Increased momentum

24.



The diagram shows a vacuum flask used to keep liquid hot.
energy pass through the vacuum?

How does thermal

★ (a) Conduction only

★ (b) Convection only

★ (c) Radiation

★ (d) Conduction and convection.