

YEAR 2010 PAPER 1: 28TH OCTOBER, 2010 P1

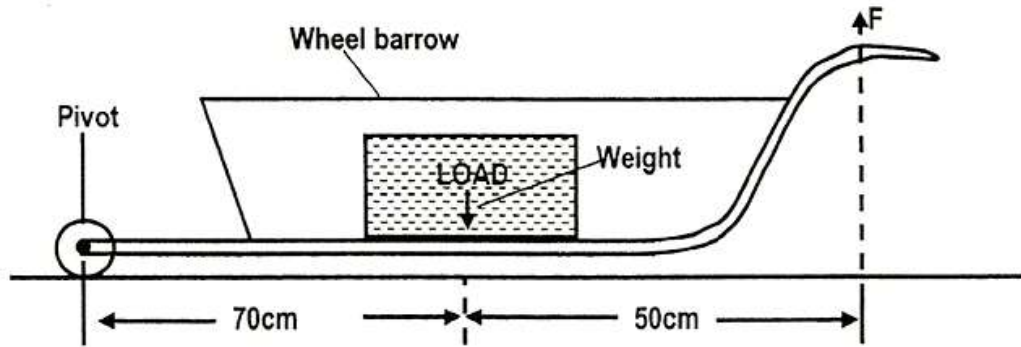
1. A plumber needs to measure the internal diameter of a water pipe as accurately as possible. The instrument that should be used is the ...
 - A. vernier callipers
 - B. engineer's callipers
 - C. measuring tape
 - D. metre rule

2. Starting from rest at $t=0$, an object moves in a straight line with a constant acceleration of 2cm/s^2 . At what time is the speed of the object 20 m/s?
 - A. 0s
 - B. 10s
 - C. 2s
 - D. 5s

3. Which property of a body cannot be changed if a force is applied to it?
 - A. velocity
 - B. volume
 - C. shape
 - D. mass

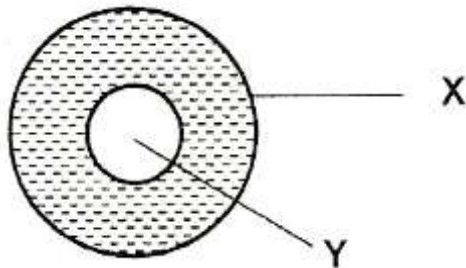
4. Give the name of the force which gives a mass of 1 kg an acceleration of 1 m/s^2 .
 - A. Weight
 - B. Friction
 - C. Newton
 - D. Centripetal force

5. A load is to be moved using a wheelbarrow. The total mass of the load and wheelbarrow is 60kg. The gravitational field strength is 10N/kg ...



What is the size of force F needed just to lift the loaded wheel barrow?

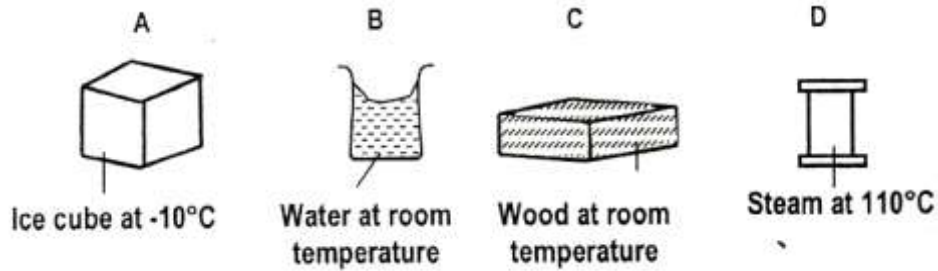
- A. 350N
 - B. 430N
 - C. 600N
 - D. 840N
6. The diagram below shows a copper disc X with a circular hole Y.



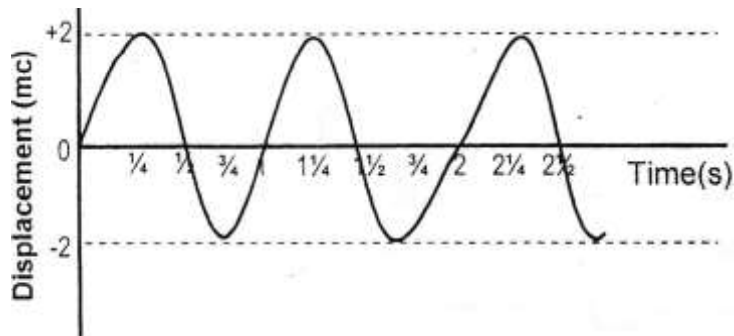
When the disc is heated ...

- A. the area of x increases and the area of y decreases
- B. the area of x decreases and the area of y increases
- C. x and y have the same area as before
- D. the area of x increases and the area of y stays the same

7. Which of the following contains the molecules with the highest average speed?
ABC



8. The diagram below shows the cross-section of a water wave.



The values that correctly represent the period and frequency of this wave are shown .

	<i>Period (s)</i>	Frequency (HZ)
A.	0	1
B.	1	1
C.	1	2
D.	2	1

9. A typist uses new carbon-paper under her top typing paper for making a copy of a letter. When she holds the carbon-paper close to a plane mirror, she can read the letter. This is because the mirror...
- A. produces a laterally inverted image
 - B. forms an image the same size as the object
 - C. forms a virtual image
 - D. forms an image the same distance

10. Echo-sounding equipment on a ship receives sound pulses reflected from the sea bed 0.03 seconds after they were sent out. If the speed of sound in sea water is 1500m/s, what is the depth of water under the ship?

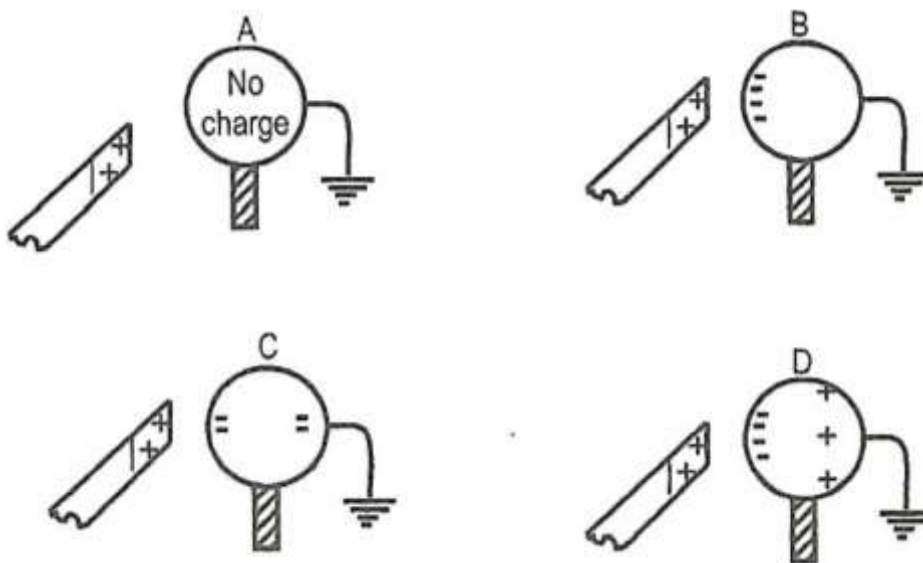
- A. 22.5m
- B. 45.0m
- C. 25 000m
- D. 50 000m

11. Which of the following units is the same as a coulomb?

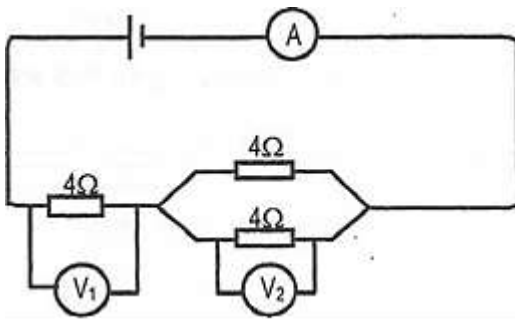
- A. V/A
- B. As
- C. Ws
- D. V/Ω

12 A metal ball is charged by induction. To do this, a positively charged rod is held close to one side of the ball and the other side is earthed.

The diagram that shows the charge distribution at this stage of the experiment is ...



13 In the circuit shown the reading on the ammeter is 1A.



What readings are shown by the voltmeters V_1 and V_2 ?

	V_1	V_2
A	2V	2 V
B	4V	2 V
C	2 V	4 V
D	4V	4V

14. . Which of the following equations cannot be used to determine electrical energy?

A. $E = VQ$

B. $E = VIt$

C. $E = I^2Rt$

D. $E = \frac{V^2t}{I}$

15. An electrical appliance is rated 250v, 500w. Find the cost of using this appliance for 120 minutes if electrical energy costs K100 per unit.

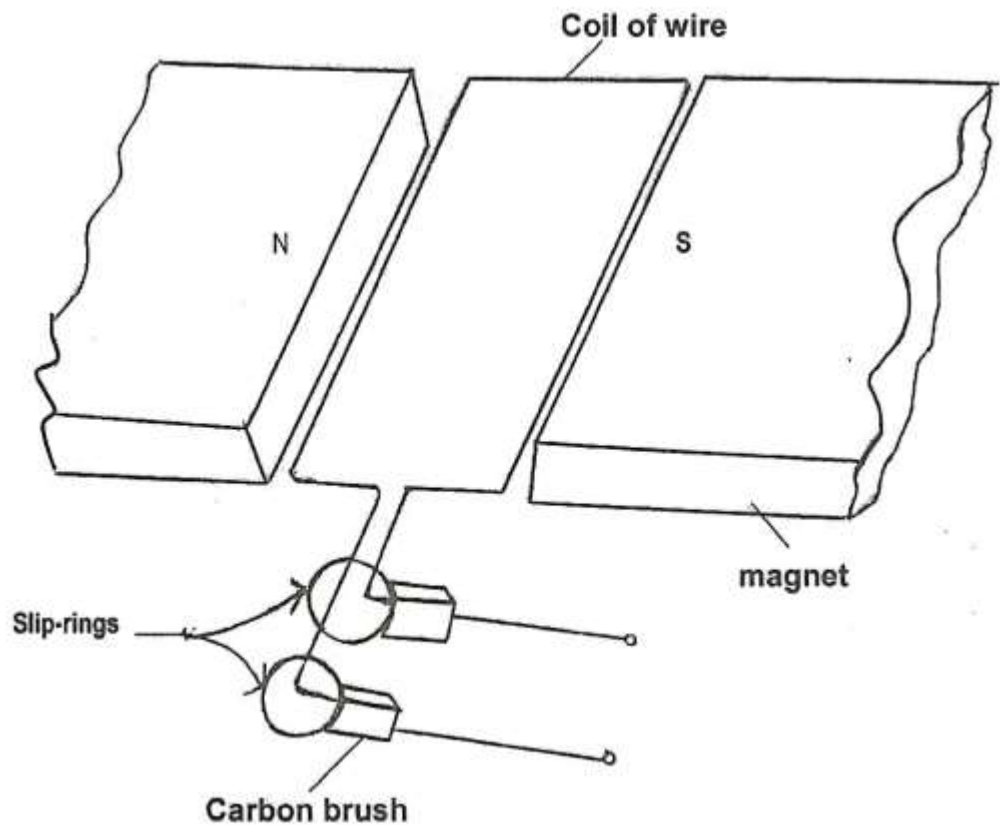
A. K100

B. K200

C. K800

D. K1200

16. Study the figure below and answer the question that follows



The figure...

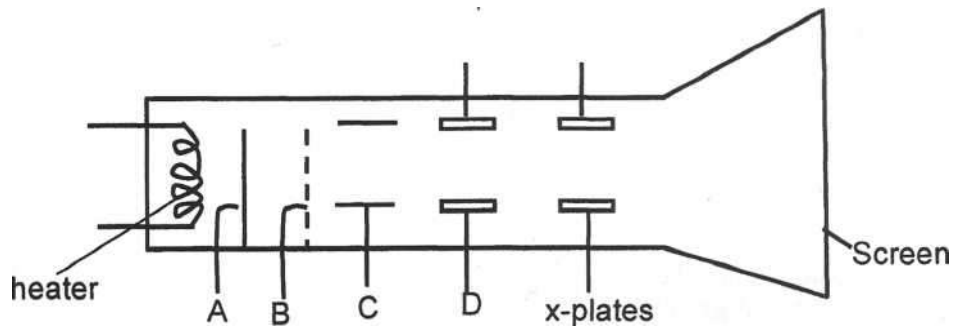
- A. represents a direct current generator
- B. requires current for the coil to rotate
- C. produces current by electromagnetic induction
- D. uses a commutator to produce an alternating current

17. An ideal transformer (one which is 100% efficient). •

- A. changes a.c. to d.c.
- B. does not lose any energy.
- C. has same number of turns in primary and secondary.
- D. has more power in secondary than in primary.

18.

19. The figure below represents a Cathode Ray Oscilloscope

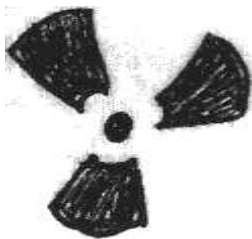


Which parts labelled A, B, C or D accelerates the electrons towards the screen?

20. The fact that it is a matter of pure chance whether or not a particular radioactive nucleus will decay during a certain period of time implies that radioactive decay is ...

- A. a time-consuming process.
- B. a rotten process.
- C. a random process.
- D. a regular process.

21.



The symbol above is used to warn of the presence of..

- A. gamma rays.
- B. radioactive material.
- C. cancer cells.
- D. radiation burns.