NAME..... ADM NO.....

SCHOOL..... CANDIDATES SIGN.....

DATE .....

232
PHYSICS
FORM 1
TIME: 2 HOURS

END OF TERM (III) EXAMINATION -2019

Kenya Certificate of Secondary Education (K.C.S.E)

232
PHYSICS
FORM 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your Name, Admission number, stream and the date of examination.
- This paper consists of two sections A and B.
- Answer ALL questions in section A and B in the spaces provided.
- All workings MUST be clearly shown on the spaces provided.
- Mathematical tables may be used.

FOR EXAMINER'S USE ONLY.

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1-18	40	
B	19	9	
	20	8	
	21	10	
	22	6	
	23	9	
	24	9	
		9	
TOTAL SCORE		100	

This paper consists of 12 printed pages .

candidates should check the question to ensure that all pages are printed as indicated and no questions are missing.

SECTION A (40MKS)

1. State three contributions of physics in communication industry. (3mks)

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2. State one first aid measure that should be taken in case of the following accidents in the laboratory.

i)Electric shock (1mk)

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ii)Eye damage due to chemicals (1mk)

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iii)Burns (1mk)

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3. Figure 1 shows a metal rod placed between two set square and a meter rule. (2mks)

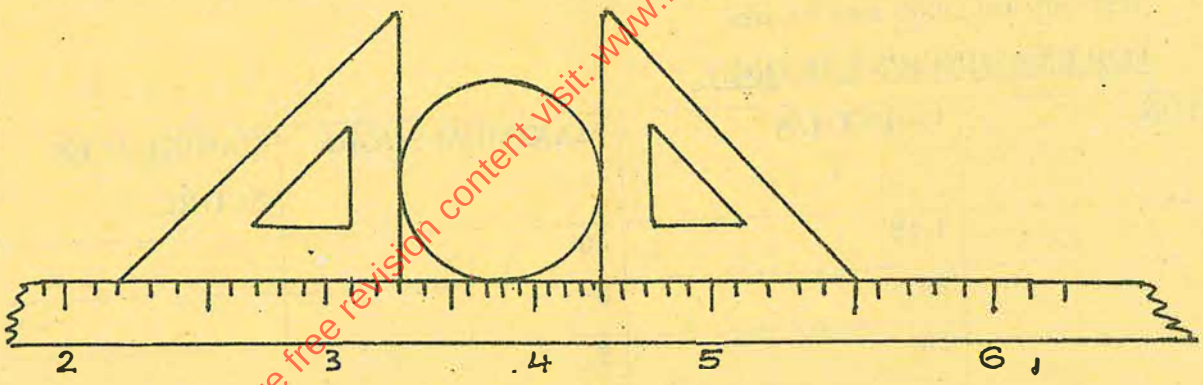

Fig 1

State the radius of the rod. (2mks)

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4. State two factors considered when choosing an instrument to measure a given length. (2mks)

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5. Define force and state its SI unit. (2mks)

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6. a)Which force is responsible for wetting glass of when a liquid is poured in it. (1mk)

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b)Give a reason why the weight of a body varies from place to place. (1mk)

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7. A glass of dimensions 2m by 1m by 0.5 has a mass of 3kg. Determine the maximum pressure it can exert on a flat horizontal surface. (2mks)

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8. A tin with a hole is filled with water to a certain height. Water jets as shown in figure 2(a) A second identical tin is filled with water to the same height and a block of wood floated as shown in figure 2(b)

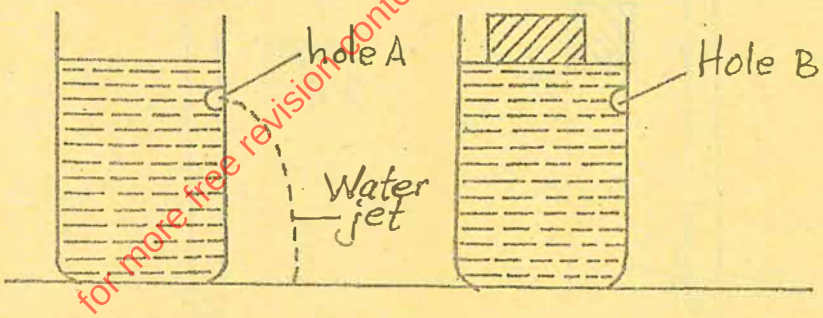

Fig (2a) fig (2b)

State with a reason from which hole water gets out a greater distance. (2mks)

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9. Figure 3 below shows a path taken by a smoke moving from P to Q in air particle.

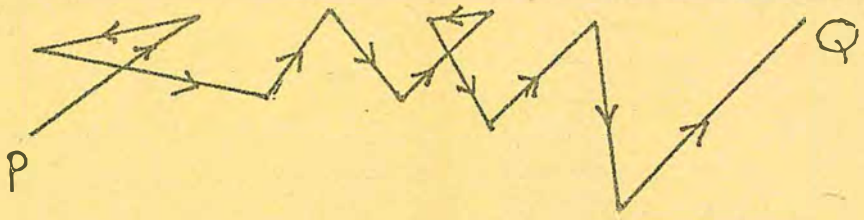

Fig 3

a)Explain what causes the nature of the motion above. (1mk)

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b)State the effect of temperature rise on the motion of the particle from P to Q. (1mk)

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10. State two factors that affect diffusion rates of gases. (2mks)

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11. Figure 4 below shows a horizontal copper wire tightly fixed. A mass M is suspended from the wire using a slider at a point closer to A than B.

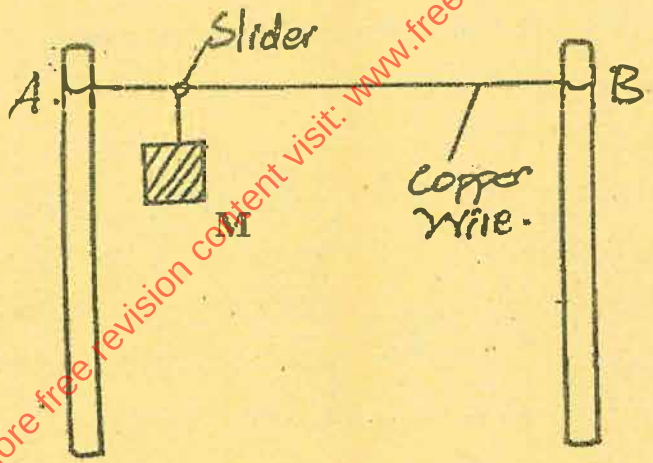

Fig 4

The copper wire is then heated for some time .State and explain what is likely to be observed on the position of the mass. (2mks)

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12. Figure 5 below shows an alumininium tube stuck tightly in a steel tube.

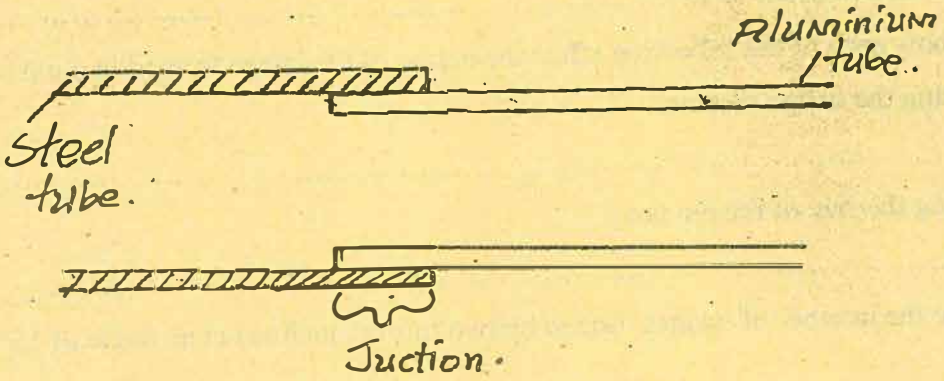

Fig 5

Explain how the two tubes can be separated by applying a temperature change at the junction given that aluminum expands more than steel for same temperature rise. (2mks)

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13. State two variables that must be checked when comparing thermal conductivities of the same materials. (2mks)

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14. Two identical copper rods in figure 6 are such that one rests on a metal block and the other one on a wooden block. The protruding ends are heated using a Bunsen burner as shown.

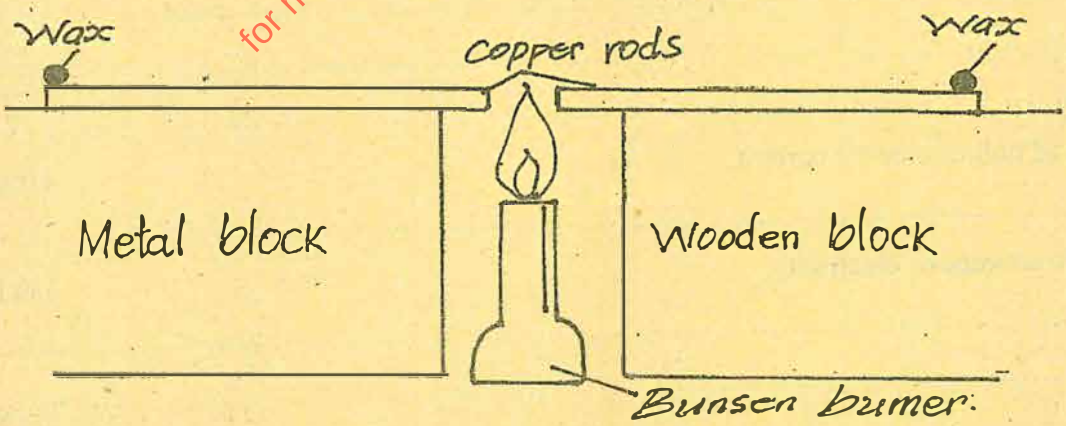

Fig 6

State which wax will melt first? Give a reason for your answer. (2mks)

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15. Explain how each of the following affect the nature of the image formed in a pin hole camera.

a)Increasing the image distance. (1mk)

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b)Reducing the size of the pin hole. (1mk)

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16. Determine the number of images formed by two mirrors inclined at an angle of 15° to each other. (2mks)

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17. Figure 7 below shows a negatively charged electroscope.

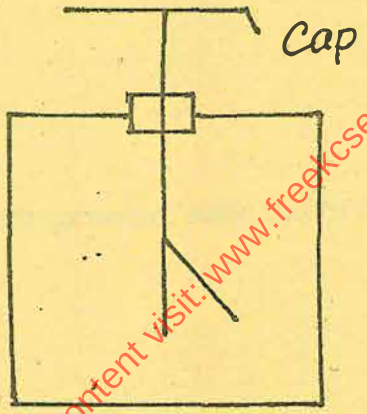

Fig 7

State and explain the observation when a negatively charged rod is brought close the cap. (3mks)

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18. a)State the SI unit of electric current. (1mk)

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b)Name two sources of electricity. (2mks)

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SECTION B (60MKS)

19. a)Explain why the mass of a body remains the same even when it is moved to another planet. (1mk)

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b)The area of a map of a given village was estimated to be 60.5cm^2. Given that the maps was drawn to a scale of 1:200,000, calculate the actual area of the village in hectares. (2mks)

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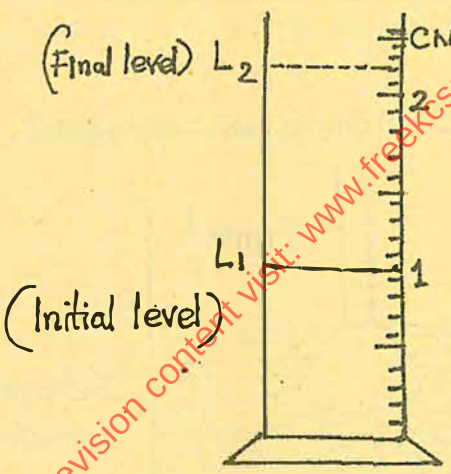
c)The final level in the measuring cylinder shown below as after some drops of water were added.



Calculate the number of drops given that volume of each drop added was 0.06cm^3. (3mks)

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d)The density of a mixture obtained after adding 1500cm^3 of fresh water of mass 15000g to 500cm^3 of sea water of mass m was 1.4g/cm^3.

Calculate the mass M (3mks

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20. a)Distinguish between mass and weight. (2mks)

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b)An astronaut weighs 900N on earth where the gravitational pull is 10N/kg. When the same austranant is taken to another planet he weighs 720N. Determine the gravitational field strength on that planet. (3mks)

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c)i)Define surface tension. (1mk)

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ii)Figure 8 below shows a funnel dipped into a soap solution.

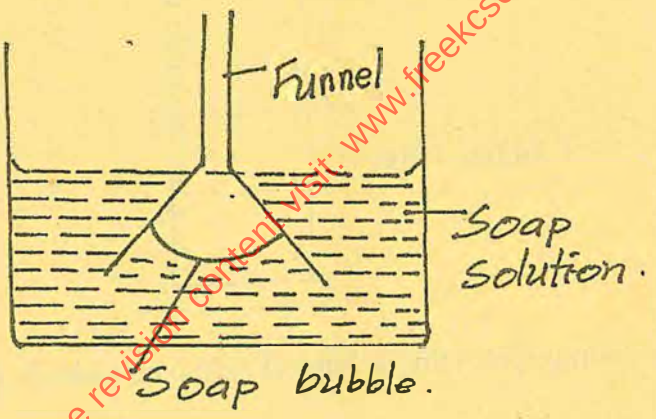

Fig 8

State and explain what happen to the soap bubble when the funnel is removed. (1mk)

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iii)State one ways of increasing surface tension. (1mk)

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21. a)Figure a below shows a simplified hydraulic braking system of a car.

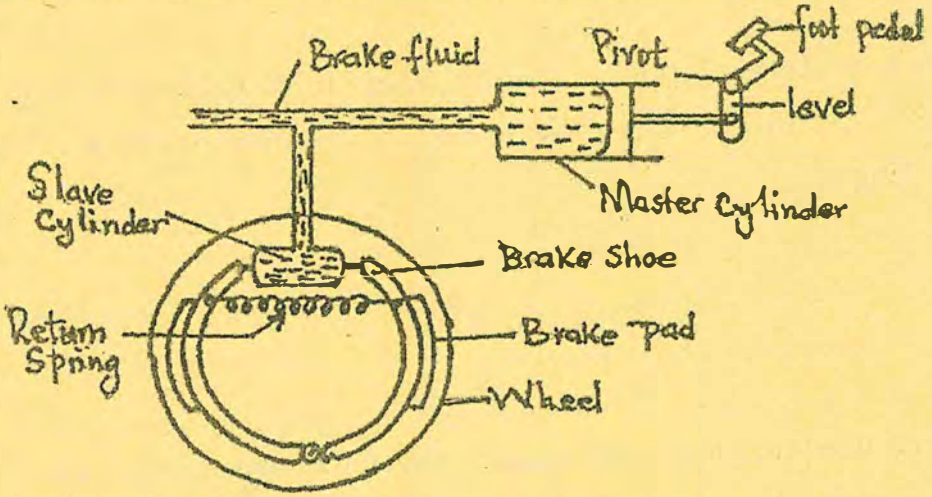

Fig 9

i)State the property of the liquid (oil) that makes it more suitable than a gas for use as a brake fluid. (1mk)

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ii)Explain how the system works starting from when the driver press the foot pedal. (3mks)

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b)Figure 10 below shows a manometer used to measure gas pressure.

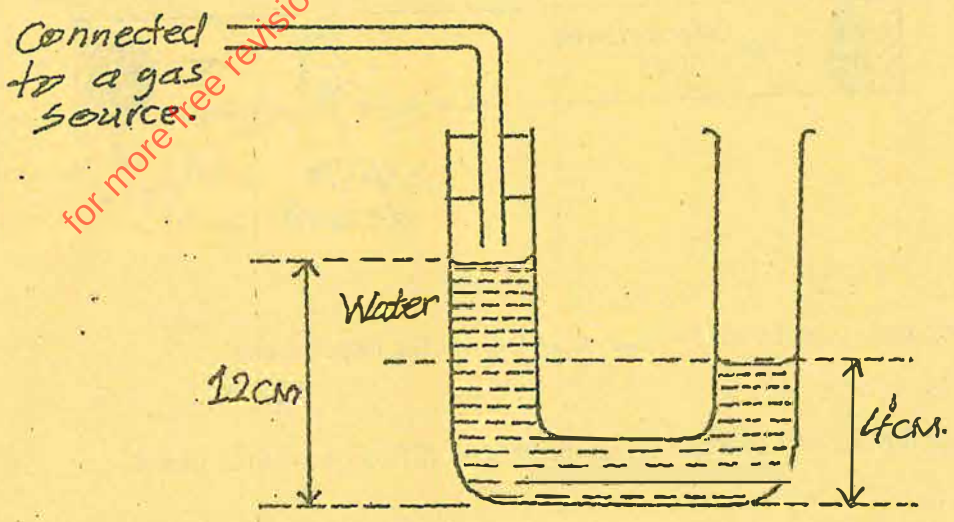

Fig 10

Determine the gas pressure pg given that atmospheric pressure is 760 mmHg, density of water is 100kg/m^3 and of mercury 13600kg/m^3 (3mms)

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c)The barometric height in a town is 65cmHg. Given that the standard atmospheric pressure is 76cmHg and the density of mercury is 13600kg/m^3 , determine the altitude of the town.(Density of air = 1.25kg/m^3) (3mks)

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22. a)A beaker is filled completely with water. A spoon full of common salt is added slowly. The salt dissolves and water does not overflow.

i)Why is water added slowly? (1mk)

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ii)State the reason why water does not overflow. (1mk)

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b)In figure 11 below, ammonia gas and an acid gas diffuse and react to form a while deposits on the walls of a long glass tube.

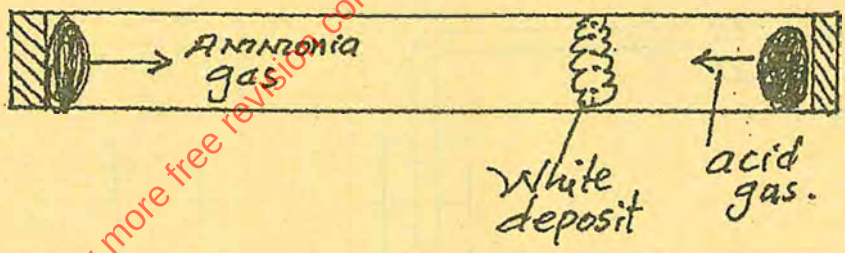

Fig 11

i)What conclusion can be made from the result of the experiment? (1mk)

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ii)How does the density of a gas affect the rate of diffusion n of the gases. (1mk)

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iii)The experiment is performed at a lower temperature.

State and explain how the time taken to form the white deposits would be affected. (2mks)

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23. a)Figure 12 below represents a simple fire alarm.

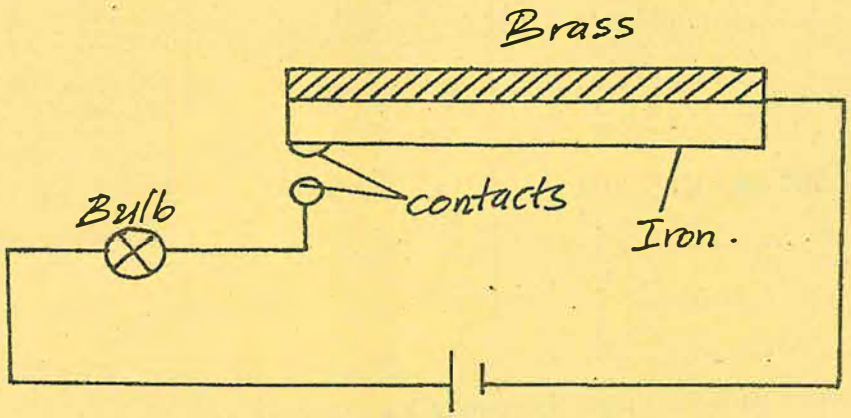

Fig 12

Explain how it works. (3mks)

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b)Figure 13 below shows a flask filled with a glass tube dipped into a beaker containing water at room temperature . The cork fixing the glass tube is tight.

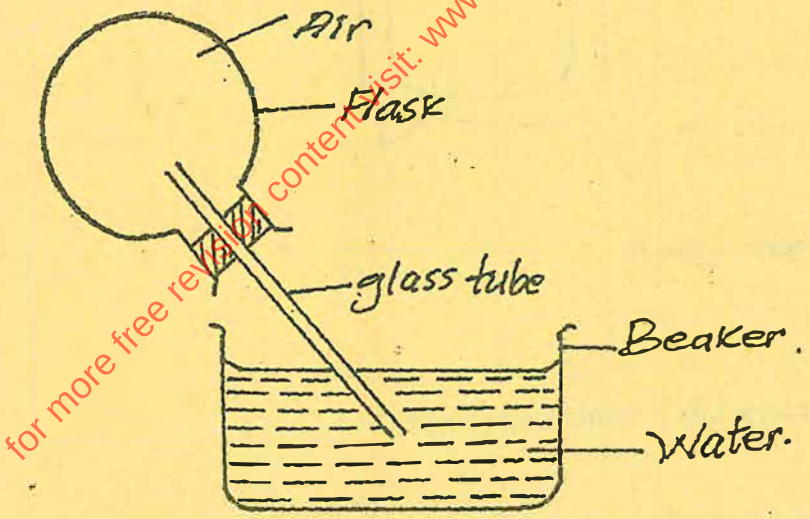

Fig 13

Explain what would be observed if cold water is poured over the flask. (3mks)

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c)i)State one advantage of alcohol over mercury when used as a thermometric liquid. (1mk)

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ii)Explain why it is not advisable to sterilize a clinical thermometer in boiling water. (2mks)

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24. a)Define heat and state its SI unit. (2mks)

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b)Figure 14 below shows a simple diagram of a vacuum flask.

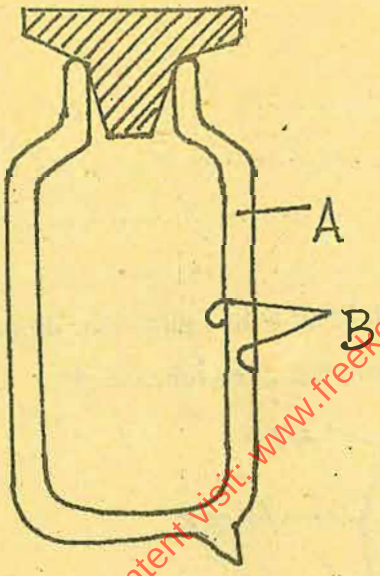

Fig 14

i)Name parts labelled A and B (2mks)

A .....

B .....

ii)What type of energy loss is minimized by part B. (1mk)

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iii)Explain how part B minimizes heat losses through the mode stated in (ii) above. (1mk)

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c)Figure 15 below shows a box with glass tubes A and B. A smouldering rag producing smoke is placed above glass tube A.

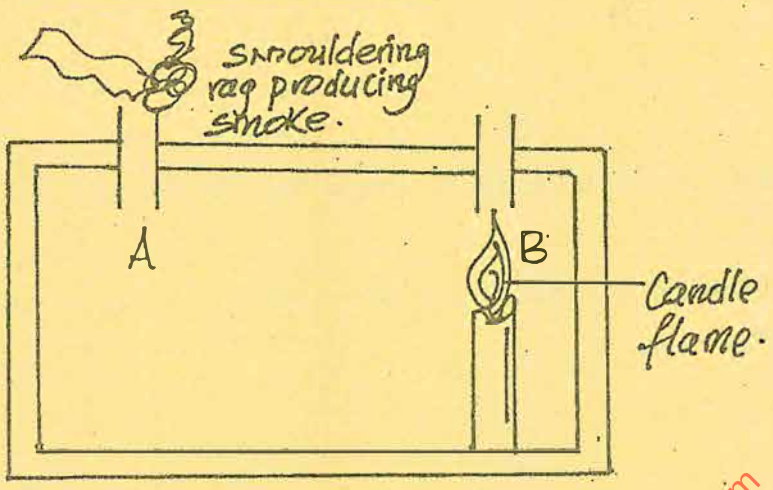

Fig 15

i)Indicate on the diagram, the direction of smoke inside the box. (1mk)

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ii)Explain why smoke takes the direction you have indicated in (i) (2mks)

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25. a)State the two laws of reflection. (2mks)

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b)Figure 16 below shows two mirrors inclined at an angle of 50° (1mk)

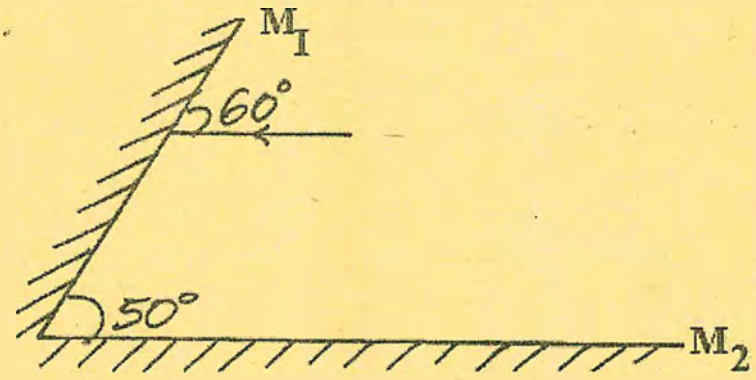

Fig 16

A ray of light strikes M, at an angle of 60° as shown in the diagram. Complete the path of the ray until it gets to mirror M_2 showing all the angles and state the final angle of reflection. (3mks)

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c)i)Give one factor that affects the type of shadow formed by any object. (1mk)

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ii)A boy 120cm tall forms a shadow of 300cm. A tree nearby forms a shadow of length 10m. Calculate the height of the tree. (3mks)

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