

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

CANDIDATE'S SIGNATURE: .....

DATE: .....

PHYSICS

TERM II – 2021

FORM ONE

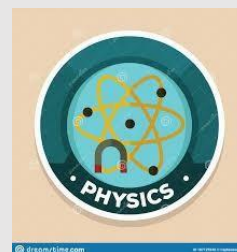
## GURU'S ENDOF TERM II JOINT EVALUATION

### *Kenya Certificate of Secondary Education.*

(K.C.S.E)

#### INSTRUCTIONS TO CANDIDATES

- Write your *name* in the spaces provided at the top of this page.
- Write your *admission, date* and *sign* on the spaces provided above
- This paper consists of two sections: **Section A** and **Section B**.
- Answer ALL questions from section **A** and **B**
- All answers and workings must be written on the question paper in the spaces provided below each question.
- Show *all the steps* in your calculation, giving your answer at each stage in the spaces below each question.
- This paper has 13pages. It is the responsibility of the candidate to ascertain that all the pages are printed as indicated and that no questions are missing.*
- Candidates should answer the questions in English.*



#### FOR EXAMINERS USE ONLY

SECTION	Question	Maximum Score	Candidate's Score
A	1-13	25	
	14	15	
B	15	29	
	16	11	
	TOTAL	80	

**SECTION A (25 MARKS)**

1. Define the term physics (1 mark)

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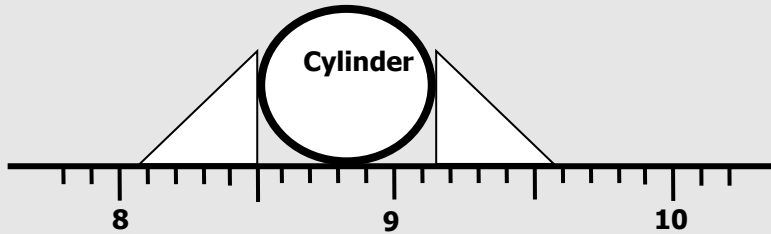
2. State two branches of physics (2 marks)

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3. Differentiate fundamental quantities from derived quantities and give an example of each (3 marks)

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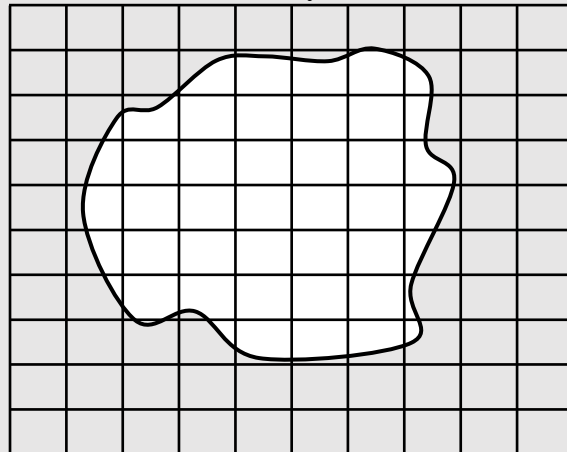
4. A Figure below is an arrangement of two set squares and a rule being used to determine the external diameter of a cylinder.



What is the radius of the cylinder? (2 marks)

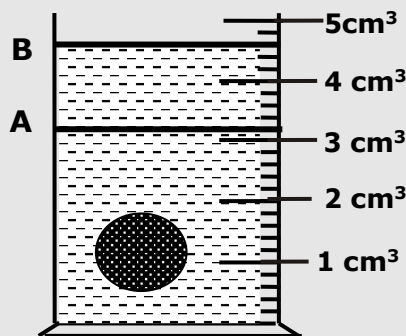
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5. The figure below shows the map of a school compound. Each square is equivalent to  $1\text{cm}^2$ . Calculate the total area covered by the school on the map. (2marks)



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6. The figure below shows a measuring cylinder which contains water initially at a level A. A spherical solid of mass 11g is immersed in the water, the level rises to B.



Determine the diameter of the spherical ball (3marks)

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7. A wooden cube of length 10cm has a mass of 40g. Determine its density in  $\text{kgm}^{-3}$  (2 marks)

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8. State effects of a force on a moving body (2 marks)

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9. State two types of forces that are not in contact (2marks)

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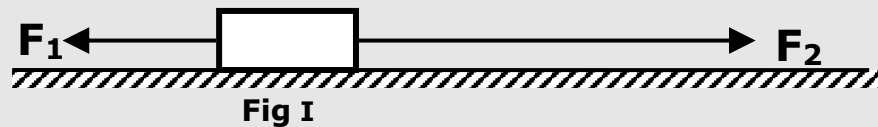
10. An object weighs 49N on earth where acceleration due to gravity is 9.8N/kg. Find the acceleration due to gravity on another planet where the same object weighs 40.5N. (2 marks)

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11. Explain the washing effect of soap. (2mark)

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12. The fig (I) below shows a body acted on by two forces  $F_1=3N$  and  $F_2=8N$



On the fig (II) below draw the force  $F_3$  that has the same effect on the body as the two forces. (1mark)



13. State pascal's principle. (1 mark)

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**SECTION B (55 MARKS)**

14. a) Name the type of force that: (2mark)

(i) Attracts bodies toward the centre of the earth.

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(ii) Opposes motion between two surfaces in contact.

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b) State the reason why it is not correct to quote the weight of solid objects in kilograms (1mark)

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c) The figures (i) and (ii) below shows two capillary tubes dipped in water and mercury respectively.

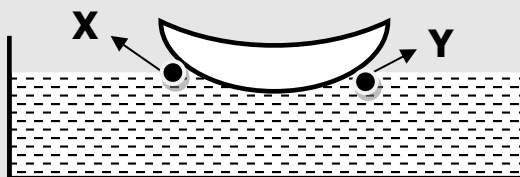


i) Indicate on the diagrams above the likely levels of water and mercury in the respective tube (2marks)

ii) Explain your answer in (i) above. (2marks)

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d) The figure below shows a small toy boat floating on water in a basin. X and Y are two point near the toy. A hot metal rod is dipped into the water at point X



Explain the observation that would be made immediately.

(2mks)

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e) State two ways of making the force demonstrated in (d) above stronger. (2marks)

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f) State four differences between mass and weight. (4mk)

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15. a) Define pressure.

(1 mark)

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b) A student wearing sharp pointed heeled stiletto shoes is likely to damage a soft wooden floor. Explain. (1mark)

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c) State two factors that affect pressure in solids.

(2marks)

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d) A block of mass 60kg measures 0.6m by 0.5m by 4cm. Calculate:

i) The maximum pressure it can exert. (3 marks)

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ii) The minimum pressure. (2marks)

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e) A man of mass 80kg exerts a pressure of 200,000Pa on the ground while standing on both feet.

i) Calculate the area of each foot. (2marks)

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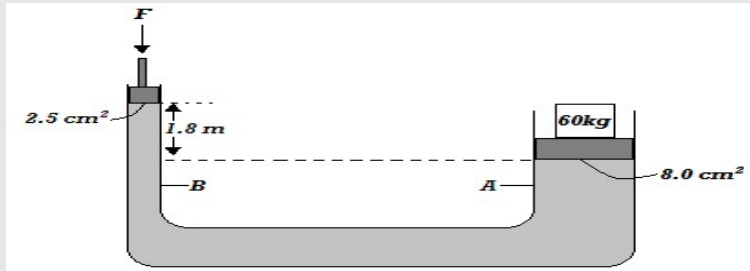
ii) How much pressure would be exert if he stands on one foot? (2 marks)

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f) State the characteristics of pressure of at a point inside a fluid. (2 marks)

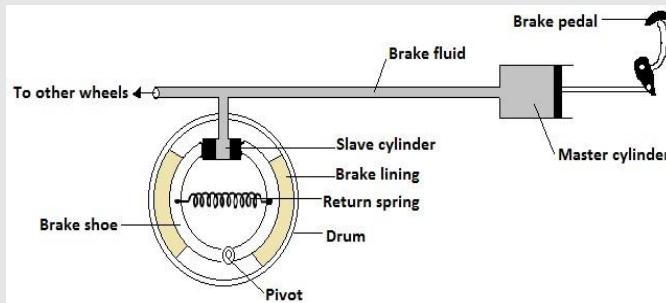
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- g) The figure below shows two masses placed on light pistons. The pistons are held stationary by the liquid whose density is  $0.8\text{g/cm}^3$ . Determine the force  $F$ . (3 marks )



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- h) The figure below shows hydraulic braking system



Briefly explain how it works.

(4 marks)

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i) The barometric height at sea level is 76cm of mercury while that at a point on a highland is 74cm of mercury. What is the altitude of the point? Take  $g = 10\text{N/kg}$ , density of mercury =  $13600\text{ Kg/m}^3$  and density of air as  $1.25\text{Kg/m}^3$ . (3marks)

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j) Explain why;

(i) It is difficult to remove the lid from a preserving jar which was closed when the space above the food was full of steam (2 marks)

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(ii) A force pump must be used instead of a lift pump to raise water from a deep well over. (2 marks)

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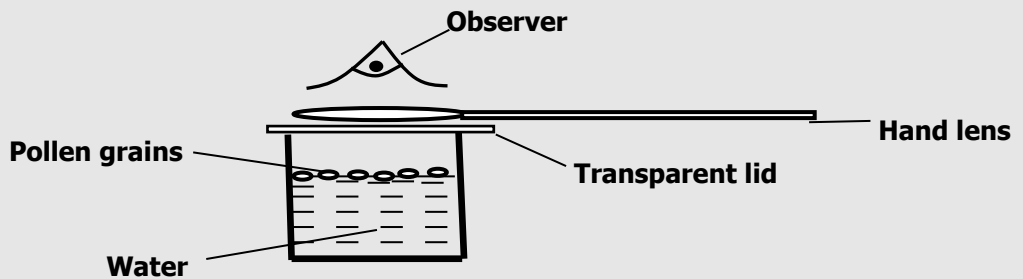
16. a) State the evidence to show that matter is made up of very small particles. (1marks)

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b) A student observed some pollen grains on the surface of water in a beaker as shown below.



(i) State the observation made (1mark)

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(ii) Explain the observation in (i) above (1mark)

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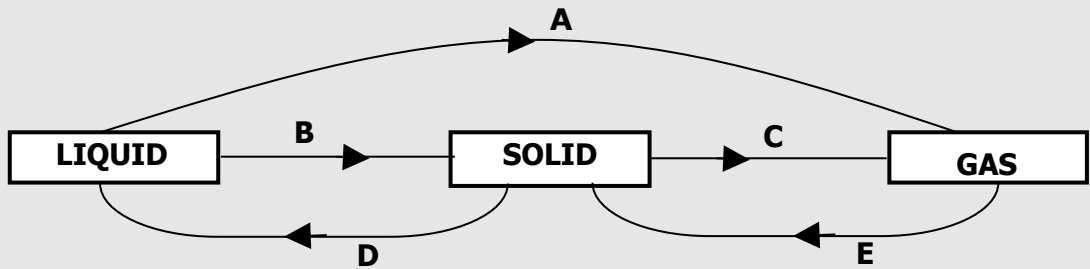
(iii) State the changes observed when the temperature of the water above is increased. (1mk)

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c) i) State the kinetic theory of matter. (1mark)

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ii) Name the processes A, B, C, D and E taking place below. (4marks)



A ..... C.....

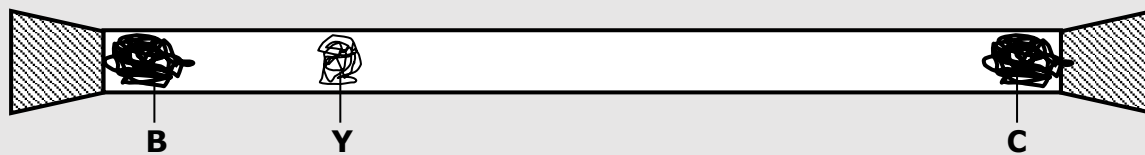
B ..... D.....

E.....

d) A bottle containing a smelling gas is opened at the front bench of a Classroom in the afternoon. State the reason why the gas is detected throughout the room shortly. (2marks)

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e) The set-up shown in the figure below is used to investigate the rate of diffusion of two gases. B and C are cotton wools soaked in hydrochloric acid and ammonia solution respectively.



A white deposit Y is formed between B and C. Compare the densities of the two gases. (2marks)

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