

SUNRISE EVALUATION EXAMS FORM 2-2021

Name: Adm. No.....

Candidate's sign:Date.....

PHYSICS
(THEORY)END TERM 1
TIME: 2½ HOURS

FORM TWO

INSTRUCTIONS TO CANDIDATES:

- Write **your name, admission number, date** of examination and the **name** of your school in the spaces provided above.
- **Sign** and **write** the **date** of examination in the spaces provided above.
- This paper consists of sections: **A** and **B**.
- Answer **all** the questions in section **A** and **B** in the spaces provided.
- All working **must** be clearly shown in the spaces provided.
- Mathematical tables and electronic calculators may be used.

For Examiner's Use Only

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 12	25	
B	13-17	13	
		12	
		16	
		14	
TOTAL SCORE		100	

This paper consists of 8 printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing

SECTION A (25MARKS)

Answer all question this section

1. Distinguish between mass and weight of a body stating the S.I units for each. **(2mks)**

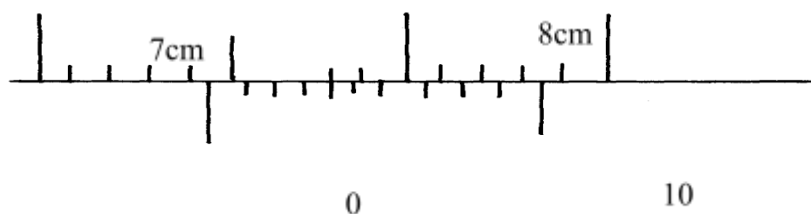
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2. a) The figure below shows part of scale of vernier calipers



What is the reading indicated on the scale **(2mk)**

- b) What is the reading on the micrometer screw gauge shown below with an error of +0.5mm?

(3mks)

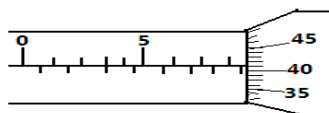


Figure 1

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3. 180cm^3 of fresh water of density 100kg/m^3 is mixed with 2200cm^3 of sea water of density 1025kg/m^3 .

Calculate the density of the mixture **(4mks)**

4. Explain why fish can survive under water when the surface is already frozen **(2mks)**

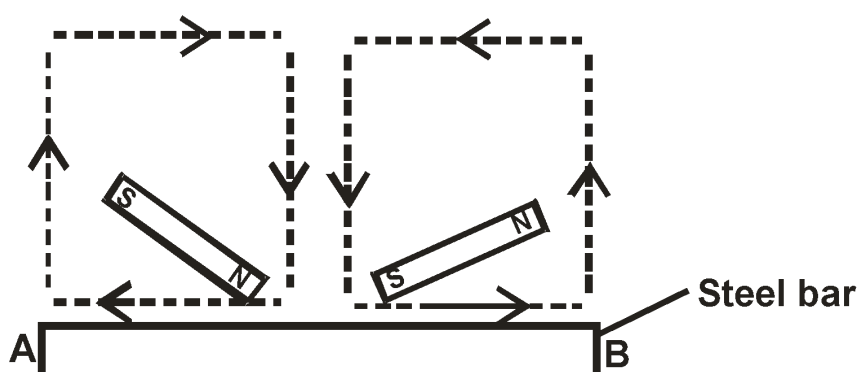
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5. a) The figure below shows a method of magnetization used in making magnets.



- i) Name the method. **(1 mark)**

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- ii) Identify the polarities A and B of the magnet produced. **(2 marks)**

A

B.....

- iii) Apart from this method, state any other **three** methods used in magnetization. **(3mark)**

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- b) In demagnetization by electrical method:

- i) State the type of current used. **(1 mark)**

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

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c) Explain why when demagnetizing a magnet, the magnet should be held in the East-West direction.

(2 marks)

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d) Figure 3 shows a coil of insulated wire wound on a horse shoe soft iron core AB and connected to a power supply

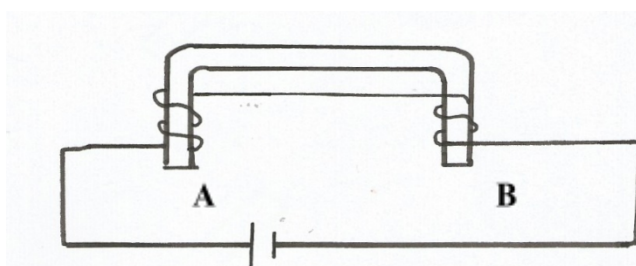


Figure 3

Name the polarity at A.....

(1mk)

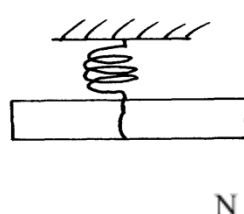
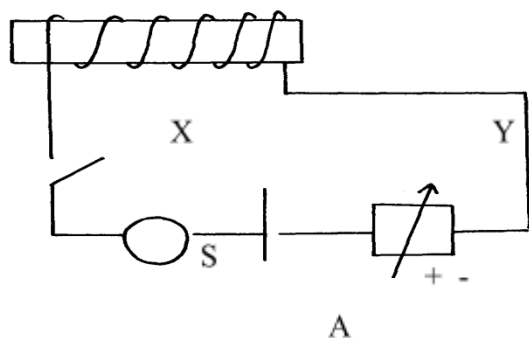
B

(1mk)

6. State **one** advantage of an alkaline battery over a lead acid battery.

(1mk)

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ng. State with reason the

(2mks)

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8. Convection and diffusion both involve motion of fluids. Distinguish between the two. (2mks)

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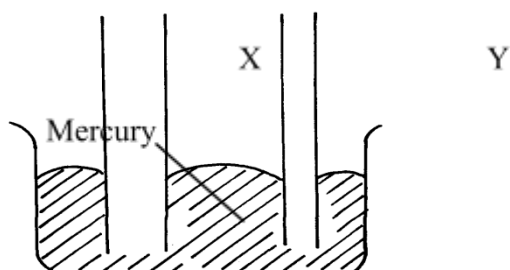
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9. A negatively, charged rod is brought close to (but not touching) an uncharged sphere. If the sphere is momentarily earthed and then the rod is removed, briefly explain what happens. **(2mks)**

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10. Indicate on the diagram below, the level of mercury in the tubes **X** and **Y** **(2mks)**



11. An object weighs 1200N on a certain planet. What is the gravitational field strength of this planet if the object is 60kg? **(3mks)**

12. State **three** properties of a thermometric liquid. **(3mks)**

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SECTION B (55MARKS)

Answer all question this section

13.

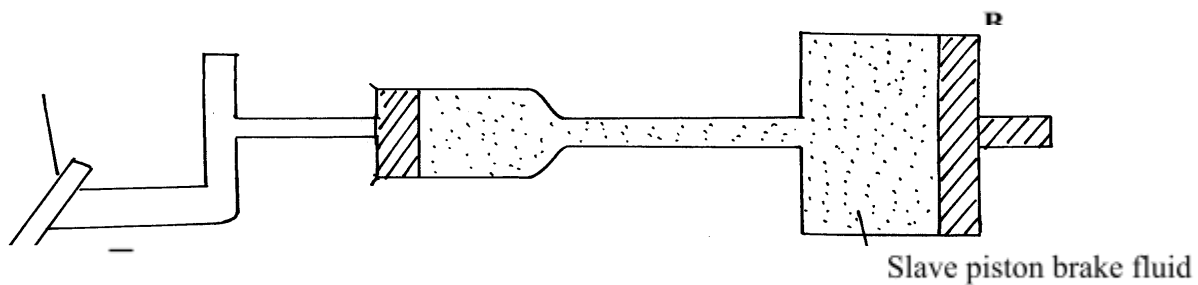
- a) Define **pressure** and give its S.I nits.

(2mks)

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- b) The diagram below represents a motor car hydraulic braking system;



- i. State **two** properties of the liquid used as a brake fluid

(2mks)

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- ii. Given that in the diagram **(b)** above the master piston has an area of 15cm^2 and the slave piston has an area of 50cm^2 a force of 100N is applied on the master piston. Find the force used to stop the car.

(3mks)

- c) Compare the values of pressure in the two pistons above and give a reason for your answer. **(2mks)**

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- d) Give a reason why gas is not suitable for use in place of the brake fluid. **(1mk)**

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14.

- a) Give reasons why it is necessary to leave the caps of the cells open when charging an accumulator **(1mk)**

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- b) Define current and state its SI unit **(2mks)**

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- c) A charge of 120 coulombs flow through a 1 am every minute. Calculate the current flowing through the lamp. **(3mks)**

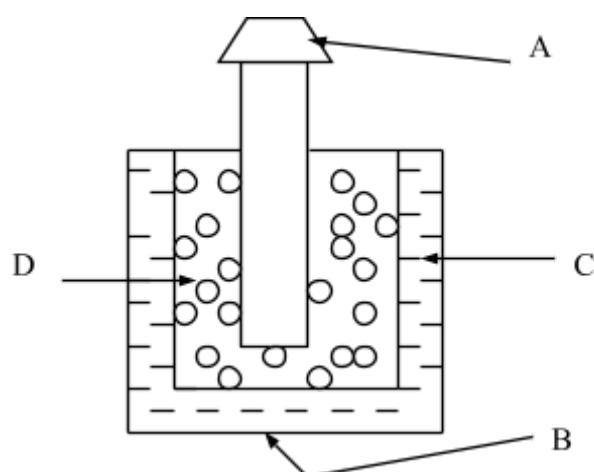
d) What do you understand by open and closed circuits.

(2mks)

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i. State the polarities of A and B.

(2 mks)

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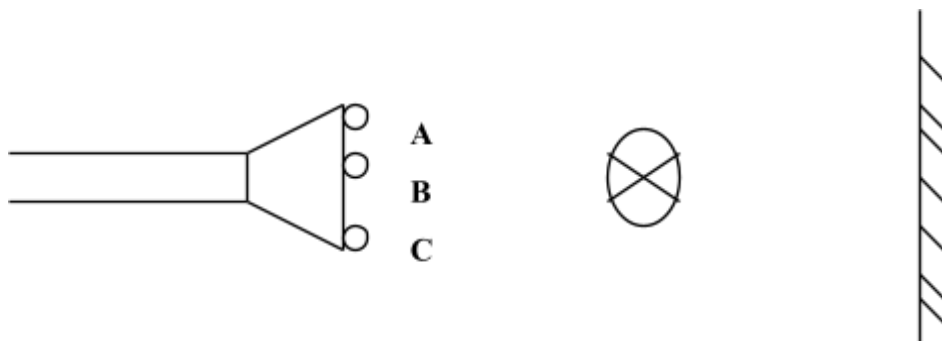
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ii. Name the chemical substances in the parts labeled C and D

(2mks)

15.

- a) The figure shows an arrangement of source of light, an opaque object and a screen. Using A, B and C as point sources, sketch on the same diagram labeled a ray diagram to show what is observed on the screen. **(3mks)**



- b) In a certain pinhole camera, the screen is 10cm from the pinhole. When the pinhole is placed 6cm away from a tree, a sharp image of a tree 16cm high is formed on the screen. Find the height of the tree. **(3mks)**

- c) Distinguish between Lunar and Solar eclipse by stating the events that lead to the formation of each **(4mks)**

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- d) A girl stands 4 m in front of a plane mirror
- i. What is the distance between the girl and the mirror **(3mks)**

16. i) State the basic law of electrostatics (2mks)

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ii) Explain how you would use an electroscope to distinguish between a conductor and an insulator (3mks)

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iii) Fill in the table of charges appropriately (5mks)

Charge on Electroscope	Charge brought near cap	Effects on leaf divergence
+	+	
-	-	
+ or -	Uncharged body	

a) What is the name given to the method of charging an electroscope where it requires an opposite charge to the one of the charging materials? (1mk)

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b) Distinguish between a basic physical quantity and a derived physical quantity giving an example of each. (3mks)

Physical quantity	Derived physical quantity

c) State any **two** ways by which frictional force between two surfaces can be reduced. (2mks)

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- d) Explain why large mercury drops form a ball on a glass slide (2mks)

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- e) Explain why a man using a parachute falls through air slowly while a stone falls through air very fast. (2mks)

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17. The figure below shows a uniform meter rule balancing when a mass of 200g is hung at one end. Determine the tension T in the string. (4marks)

