FORM 2 TERM 1 OPENER

PHYSICS

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

CLASS…………………………………………   SIGN……………………….

                                            DATE………………………

DURATION: 2 HOURS

INSTRUCTIONS.

Answer all the questions in the spaces provided.

1. List two career opportunities in physics.   (2mks)

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2. Match the following basic physical quantities.   (5mks)

Basic physical quantity	SI unit	Symbol
Time	Second	
Electric current		A
Amount of substance		mol
Thermodynamic temperature		

3. Give three differences between mass and weight. (3mks)

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4. A wire of radius 3.0mm and length 200m is melted into a sphere. Calculate the radius of the sphere in metres. (3mks)

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5. a. Give two precautions necessary while handling a density bottle.

(2mks)

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b. The mass of an empty density bottle is 20g. its mass when filled with water is 40g and 50g when filled with liquid X. calculate the density of liquid X if the density of water is $1000Kgm^{-3}$.

(3mks)

6. $1800cm^3$ of fresh water of density $1000kg/m^3$ is mixed with $2200cm^3$ of sea water of density $1025kg/m^3$. Calculate the density of the mixture. (3mks)

7. Define force and state its SI Unit. (2mks)

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8. Explain why water rises up in narrow tubes but mercury, which is also a liquid, falls in narrow tubes to a level below the outside surface. (2mks)

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9. Give two factors affecting surface tension. (2mks)

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10. Describe the working mechanism of a hydraulic brake system. (4mks)

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11. The figure below shows a U-tube filled with water, mercury and another liquid, determine the density of the liquid. (3mks)
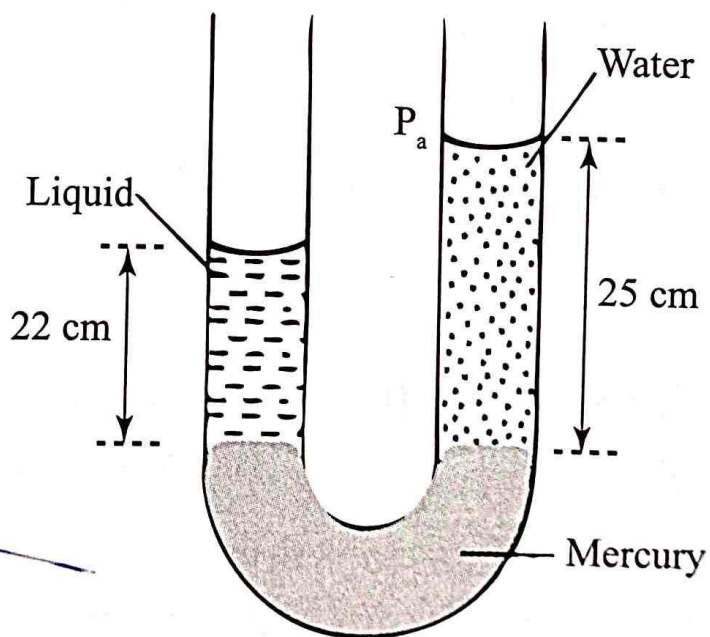
12. The figure below, ammonia gas and an acid gas diffuse and react to form a white deposit on the walls of the glass tube, the deposit forms nearer end B.

White deposit

A

B

Ammonia gas →

← Acid gas

Long glass tube

Cork
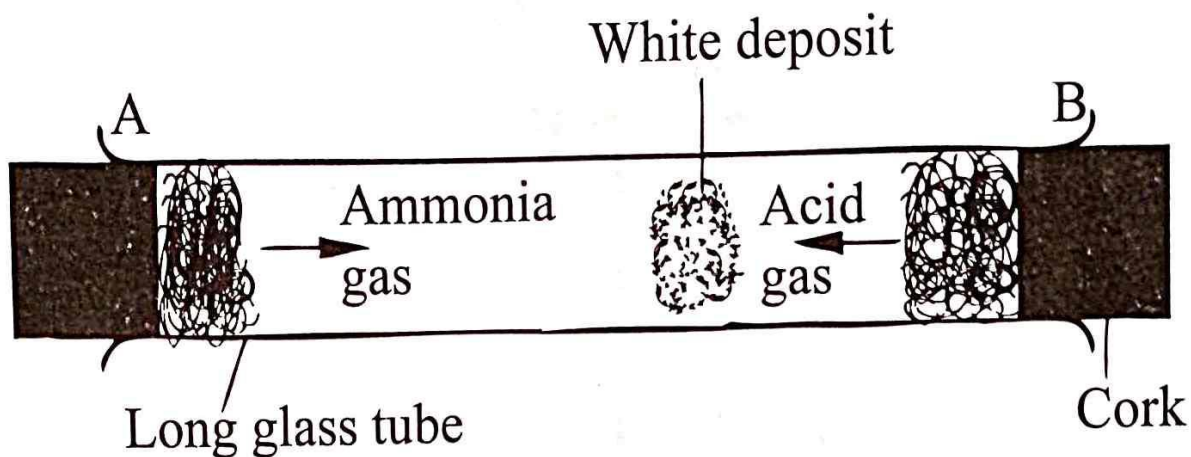
a. State which gas diffused faster. (1mk)

b. Explain how the rate of diffusion depends on the density of a gas. (2mks)

c. Explain the effect of performing the experiment above at a higher temperature. (2mks)

13. A faulty mercury thermometer reads 10^OC when dipped into melting ice and 90^OC when on steam at normal atmospheric pressure. Determine the reading of this thermometer when dipped into a liquid at 20^OC. (3mks)

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14. What is the purpose of a translucent screen on the:

    a. Pinhole camera.   (1mk)

    b. Give two characteristics of image formed by a pinhole camera.   (2mks)

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    c. The distance between the pinhole and screen of a pinhole camera is 10cm. the height of the screen is 20cm. at what minimum distance from the pinhole must a man 1.6m tall stand if a full length image is required?   (3mks)

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15. State the laws of reflection. (2mks)

    a. Angle of incidence (2mks)

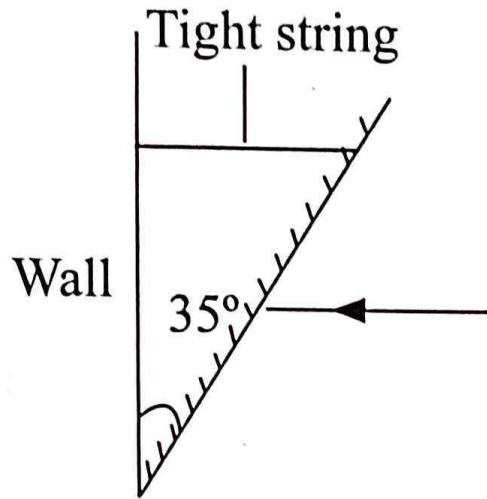   b. Give three characteristics of the images formed by a plane mirror. (3mks)

    c. How many images would be seen from two mirrors when reflecting surfaces make an angle of 60° with each other? (2mks)

    d. A plane mirror is suspended using a string and makes an angle of 35° with the wall as shown below,

A ray of light strikes the mirror horizontally. Calculate the angle between the horizontal and the reflected ray. (3mks)

16. State the basic law of electrostatic charges. (1mk)

b. List three uses of the electroscope. (3mks)

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c. List down the hazards of electrostatics. (2mks)

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17. Define electric current. (1mk)

b. A charge of 180 coulombs flows through a lamp:

i. Every minute. Calculate the current flowing through the lamp. (2mks)

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ii. Calculate the number of electrons involved (charge of electron is 1.6×10^{-19}C)   (3mks)

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WELCOME TO FORM TWO

All the Best

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