

Name: Adm No:

School: Candidate's Sign:

Date:

Physics

TIME: 2 HOURS

MID-TERM 2

TOPSKILLS PUBLISHERS EXAMS

Physics FORM 1

PHYSICS

INSTRUCTIONS TO THE CANDIDATES:-

- Write your **name** and **Admission number** in the spaces provided.
- Answer *all* the questions in the spaces provided.
- Mathematical tables and electronic calculators may be used
- All working **MUST** be clearly shown where necessary.

For Examiner's Use Only:

Question	Maximum score	Candidate's score
1-19	100 MARKS	

1. Define physics (1 mk)

.....
.....
.....

2. The following are branches of physics.
Explain what each one of the deals with.

a) Mechanics (1 mk)

.....
.....
.....

b) Atomic physics (1 mk)

.....
.....
.....

c) Geometrical optics (1 mk)

.....
.....
.....

d) Waves (1 mk)

.....
.....
.....

3. Explain how physics is applied in

a) Geography (2 mks)

.....
.....
.....

b) Home science (2 mks)

.....
.....
.....

4. State 3 laboratory rules a student should follow to avoid electrical shocks. (3 mks)

.....
.....
.....
.....
.....

5. State the first aid measure for each of the cases.

a) A cut from glass apparatus. (1 mk)

.....
.....
.....

b) When a chemical lands in the eye (1 mk)

.....
.....
.....

c) When an acid burns a hand (1 mk)

.....
.....
.....

d) An electric shock (1 mk)

.....
.....
.....

6. Differentiate between basic physical quantities and derived quantities. (2 mks)

.....
.....
.....

b) Give two examples of derived quantities . (2 mks)

.....
.....
.....

c) Fill in the table below.

(10 mks)

Basic physical quantity	S.I. Unit	Symbol of unit
Electric current		
luminous intensity		
Time		
Amount of substance		
Mass		

7. Determine the density in kg/m^3 of a solid whose mass is 1080g and whose dimensions in cm are length=3,width= 4 and height= 3 .

(3 mks)

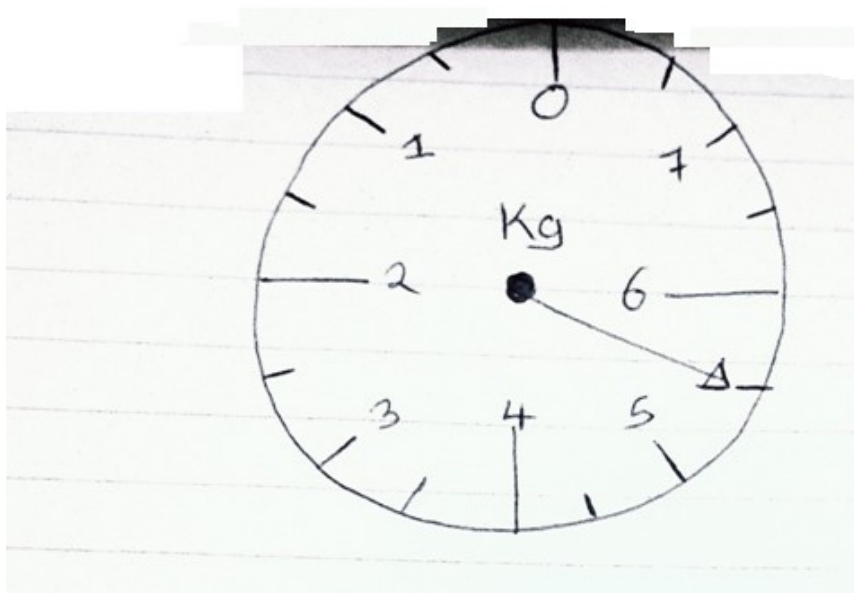
.....

.....

.....

8. Record accurately the mass indicated by the pointer in the figure below.

(2 mks)



.....

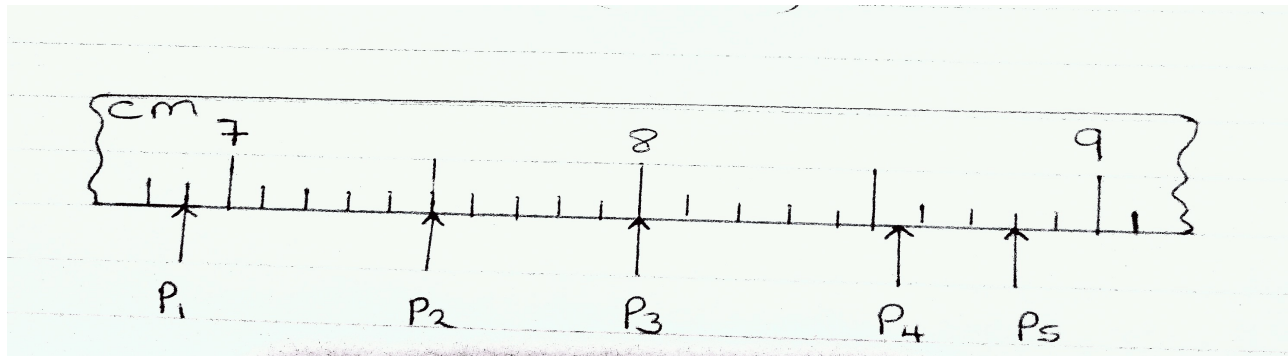
.....

.....

.....

9. What are the readings shown on the metre rule below.

(5 marks)



- P₁ =
- P₂ =
- P₃ =
- P₄ =
- P₅ =

10. A) Define force and state its SI Units

(2 mks)

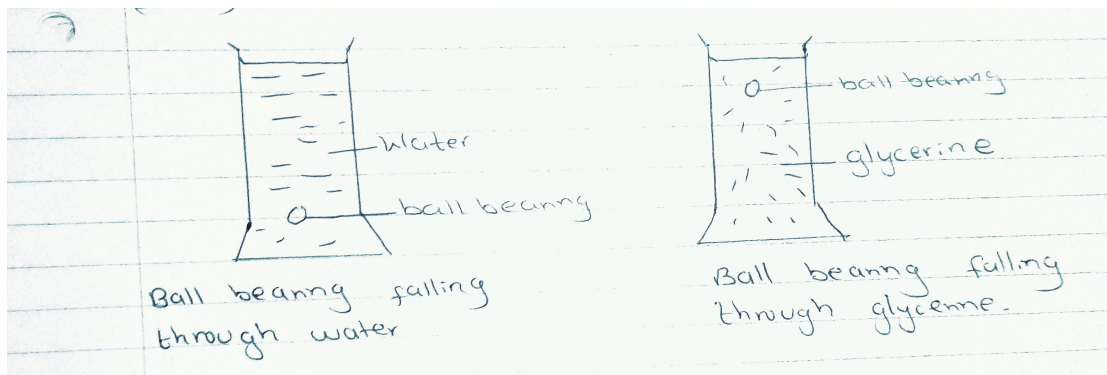
.....
.....

b) State 3 effects of force on a body.

(3 mks)

.....
.....
.....

11. When a ball bearing is dropped in water and then in glycerine . It is observed that it takes more time to reach the bottom in glycerine.



Explain this observation.

(3 mks)

.....
.....
.....

12. The figure below shows water drops on two surfaces.



a) glass surface smeared with wax

b) clean glass surface

Explain the difference in the shapes of the two drops of water (2 mks)

.....
.....
.....

13. State 2 ways of reducing surface tension in liquid. (2 mks)

.....
.....
.....

14. A body weighs 120N in air and 70N when submerged in water. Calculate the upthrust acting on the body. (3 mks)

.....
.....
.....
.....
.....

15. Give a reason why weight of a body varies from one place to another. (1 mk)

.....
.....

16. a) Define pressure and state its SI unit. (2 mks)

.....
.....
.....

b) State 2 factors that determine the pressure at a point in a liquid. (2 mks)

.....
.....
.....

c) State pascal's principle of transmission of pressure in fluids. (1 mk)

.....

.....

.....

17. A brick 20 cm long, 10 cm wide and 2 cm thick has a mass of 5 kg. Determine the
a) Maximum pressure that can be exerted by the brick on a flat surface. (3 mks)

.....

.....

.....

.....

b) Minimum pressure that can be exerted by the brick on a flat surface. ($g = 10\text{N/kg}$) (2 mks)

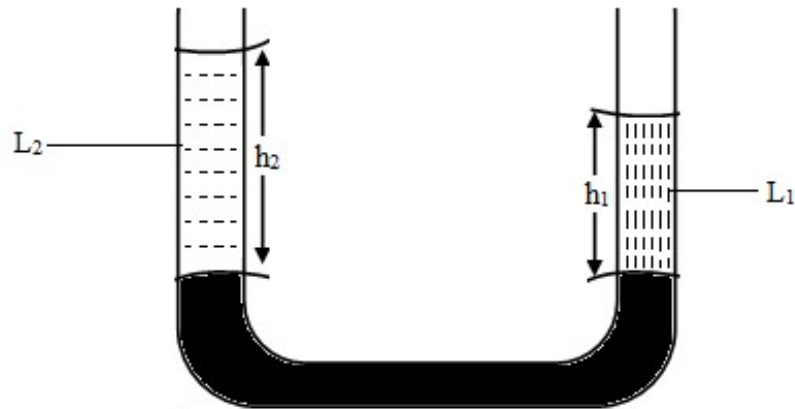
.....

.....

.....

.....

18. The figure below shows a U-tube.



a) State what happens to the flow if the system above were put in a vacuum. (1 mk)

.....

.....

b) The density of L_1 and L_2 are 1.8g/cm^3 and 0.8g/cm^3 . If $h_1 = 8\text{ cm}$ Determine h_2 . (3 mks)

.....

.....

.....

c) The density of mercury is $13,600\text{kg/m}^3$, Determine the pressure at a point 76 cm below the surface of mercury. ($g = 10\text{N/kg}$) (3 mks)

.....
.....
.....

19. The mass of a density bottle is 20.g when empty, 70g when full of water and 55g when full of second liquid

Calculate;

a) Mass of water (1 mk)

.....
.....
.....

b) Mass of liquid (1 mk)

.....
.....
.....

c) Volume of water ($\rho_w = 1\text{ g/cm}^3$) (1 mk)

.....
.....
.....

d) Density of liquid in g/cm^3 . (2 mks)

.....
.....
.....
.....
.....

*****THIS IS THE LAST PRINTED PAGE*****