

NAME: ADM NO.: CLASS:

**PHYSICS EXAM
FORM TWO
TIME: 2HRS**

1. Explain the following: (2mks)
 - i) Wet floors and wet roads are dangerous to walk on.

 - ii) Racing cyclist usually wears smooth tight clothes.

2. Convert each of the following from Kelvin to °C. (2mks)
 - a) 0 K

 - b) 167 K.

3. A mixture consists of 40cm³ of water and 60cm³ of liquid x. If the densities of water and liquid x are 1.0g/cm³ and 0.8g/cm³ respectively. Calculate the density of the mixture. (3mks)

4. The air pressure at the base of a mountain is 75.0cm of mercury while at the top 60.0cm of mercury. Given that the average density of air is 1.25kg/cm³ and the density 13600kg/m³, calculate the height of the mountain. (4mks)

5. (a) Define the term Brownian motion and its cause.
(2mks)

(b) Differentiate the three states of matter with relation to intermolecular space and intermolecular force. (3mks)

6. (a) Define the term temperature and state its SI unit. (2mks)

(b) Explain why in construction, concrete beams are reinforced with steel. (2mks)

(c) Explain three effects of anomalous expansion of water. (3mks)

7. State there advantages of mercury over alcohol as thermometric liquid.(3mks)

8. (a) State the three modes of heat transfer. (3mks)

(b) State three factors affecting thermal conductivity. (3mks)

(c) Explain why the ventilators for a room are put near the roof and not near the floor. (2mks)

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

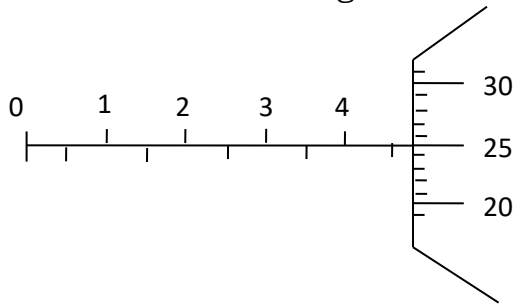
10. Explain two dangers of electrostatics. (2mks)

11. State two applications of electrostatics. (2mks)

12. List three methods of demagnetizing a permanent magnet. (3mks)

13. What is the reading indicated by the micrometer screw gauge below.

(3mks)

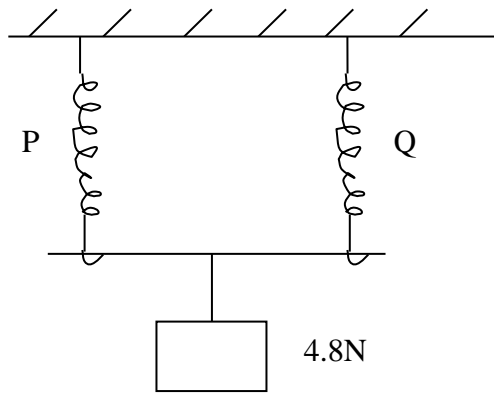


14. A uniform metal rod of length 80cm and mass 3.2kg is supported horizontally by the two vertical spring balances C and D. Balance C is 20cm from one end while balance D is 30cm from the other end. Find the reading on each balance. (3mks)

15. A convex mirror of focal length 9cm produces an image on its axis 6cm from the mirror. Determine the position of the object. (3mks)

16. Explain how an electric bell works. (3mks)

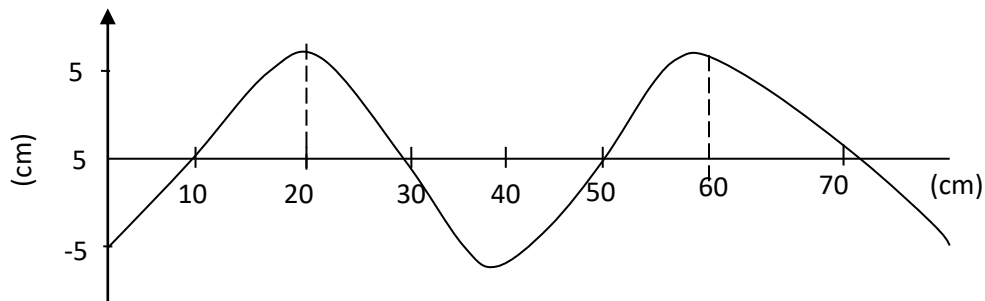
17. Two very light identical springs P and Q are arranged as shown below.



A weight of 4.8N is supported by the spring. Given that each spring has a spring constant of 10N/cm; determine the total extension of springs P and Q. (3mks)

18. Differentiate between transverse waves and longitudinal waves.(2mks)

19. The figure below shows a wave form in a string.



Given that the speed of the wave is 10m/s. With reference to this wave motion, determine;
a) Wavelength. (1mk)

b) Amplitude. (1mk)

c) Frequency. (2mks)

d) Period (2mks)

20. What is the relationship connecting frequency, wavelength and velocity of sound in air? (1mk)

21. A person standing 49.5m from the foot of a cliff claps his hands and hears an echo 0.3 seconds later. Calculate the velocity of the sound in air. (3mks)