FORM 2 TERM 2 2019
PHYSICS ANSWER SHEET.

SECTION A (25 MARKS)

1. Unlike poles attract and like poles repel.

2. Diameter = sleeve reading + Thimble reading

$$= 11.50$$
$$+ \underline{\ 0.22}$$
$$\underline{11.72 \text{ mm}}$$

3. Clockwise moments = Anticlockwise moments

$$0.4 \times 8 = (0.35 \times 4) + (0.5 \times T)$$

$$3.2 = 1.4 + 0.5\ T$$

$$T = \frac{1.8}{0.5}$$

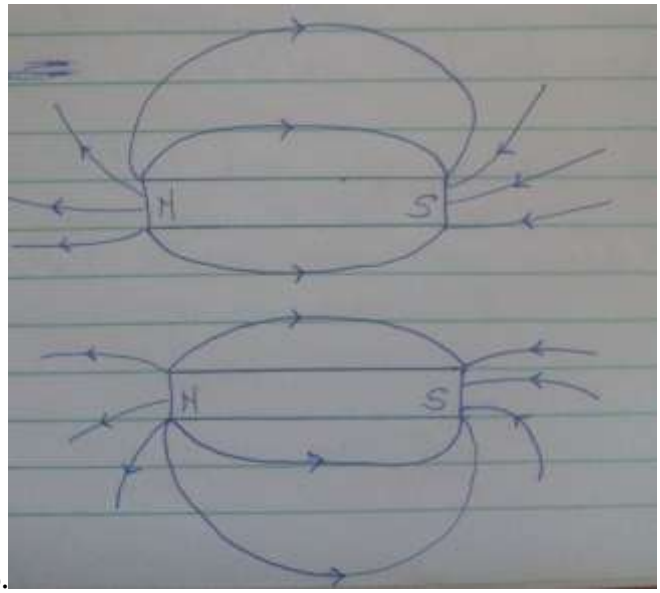
$$= 3.6N$$

4. To increase the area of support.
   To lower the Cog and hence increase stability.

5. $0.3 \times w = 0.2 \times (1.5 \times 10)$

$$W = \frac{0.2 \times 15}{0.3}$$

$$= 10N$$

6. 

7. Accumulation of bubbles around the copper plate

8. To detect the presence of charge on a body

To test the quantity of charge on a charged body.

To test the sign of charge on a charged body

To test for insulation property of a material (Any 2)

9. $n = \frac{360^0}{\Theta} - 1$

$17 = \frac{360^0}{\Theta} - 1$

$18 = \frac{360^0}{\Theta}$

$\Theta = \frac{360}{18}$

$= 20^0$

10. Rectilinear propagation of light.

11. Soft-board ceiling has many air pockets. Air being poor conductor reduces heat loss.

12. Initial water level drops due to expansion of the glass flask which gets heated first.
When heat reaches the water, water expands and then rises up the tube.

SECTION B. (55 MARKS)

13. Matter is made up of very small particles which are in constant random motion.

b) (i) For visibility of air movement

(ii) Focus light to a point in the smoke cell

(iii) Magnification of smoke particles.

c) Smoke particles are observed to move randomly.
This is due to bombardment of smoke particles with air molecules.

d) They move vigorous and thus the air molecules.

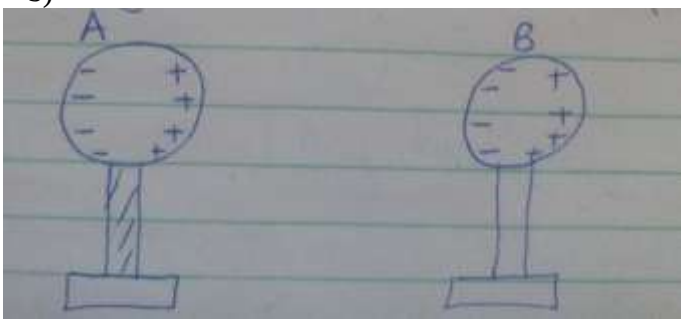
14. a) A - Vacuum

B - Silvered wall

b) B; Air above liquid in A will absorb some heat through convection.

15.a) Charges on the electroscope induce opposite charges on the conductor. Charges move from the leaf
To the cap causing a decrease in leaf divergence.

b)



c) The leaf falls because positive charges on the rod attract negative charges on the leaf and plate.
- As the rod gets closer to the cap, more electrons are attracted to the cap making them more positive
Hence they repel increasing the divergence.

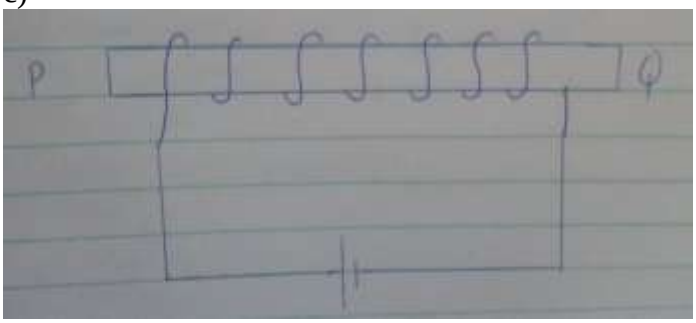
16. a) If a coil carrying current is grasped in the right hand such that the fingers point in the direction

Of the current in the coil, then the thumb points in the direction of North pole.

b) They prevent magnets from getting weaker due to self – demagnetization.

- Keepers acquire oppite polarity and keep dipoles in a closed loop retaining their magnetic strength.

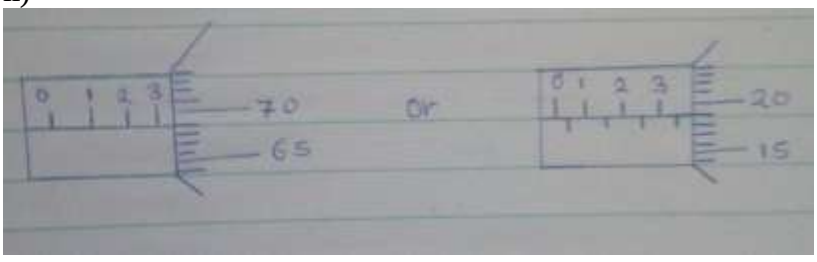
c)



d) Induction
stroking
Hammering
Electrical. (Any two)

17 a) i) 3. 69
+ 0 .02
3. 69 mm

ii)



b) Volume of one drop $= \frac{1}{50} = 0.02\ cm^3$

$V = Ah = \pi r^2 h$

$0.02=\frac{22}{7}x10x10xh$

$h=\frac{0.02x7}{22x10x10}$

$=6.34x10^{-5}cm$

c) $V=\frac{m}{d}=\frac{14}{0.8}=17.5cm^3$

Reading = 12 + 17.5 = 29.5ml.

18. a) For a system in equilibrium, the sum of clockwise moments about a point must be equal to the sum
Of the anticlockwise moments about the same point.

b) Sum of clockwise moments = sum of anticlockwise moments

$24 \times 0.5 = 16 \times (1 - x)$

$12 = 16 - 16x$

$16x = 4$

$X = \frac{4}{16} = 0.25m$ or 25cm

c) $M = \frac{W}{g} = \frac{18.5}{1.7} = 10.88kg$

19.a) Pgas = P atmospheric + ϱgh

$= 103,000 + 1000 x10 x \frac{20}{100}$

$= 103,000 + 2000$

$= 105,000N/m^2$

b) Density of liquid
Height of the liquid.

c) $\frac{F_1}{A_1} = \frac{F_2}{A_2}$

$F_2 = \frac{100 \times 10}{0.25} = \frac{1000}{0.25} = 4000N$

20. a) Luminous sources produce their own light while non-luminous do not. They reflect light that falls
on them.

b) Transparent objects allow light to pass through them and one can clearly see through them.Translucent objects allow light to pass through them but one cannot clearly see through them.

C)

$$U = \frac{1.6 \times 0.1}{0.2}$$

$$= 0.8m$$

ii) $$m = \frac{v}{u} = \frac{hi}{ho} = \frac{0.2}{1.6} = 0.125M$$

iii) Image is diminished.