Name: ……Class: ……..….Adm No. ……..

LSF KNOWLEDGEBASE SERIES

Kenya Certificate of Secondary Education

FORM ONE TOPICAL CHECK 1

PHYSICS

Time: 1 Hr 30 min

ELECTROSTATICS

50

1. State the law of electrostatic charge. (1 Mark)

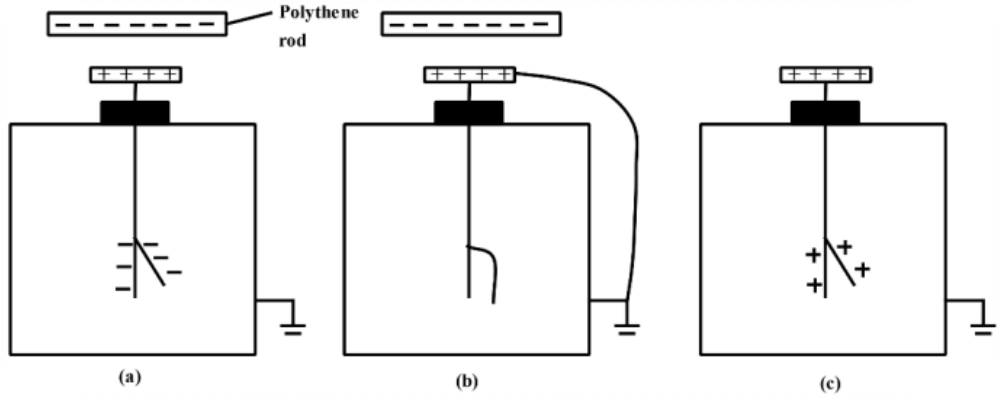
……

2. A small chain is often seen hanging at the back of a petrol carrying lorry. State and explain its significance. (2 Marks)

……

……

3. Figure 2a, 2b and 2c show the process of charging an electroscope by induction.



It is observed that the leaf rises in (a), collapses in (b) and then rises in (c). Explain why the leaf collapses in (b). (3 Marks)

……

……

4. Explain why a dressing table mirror may become dusty if wiped with a cloth on a warm day. (1 Mark)

……

5. State how a polythene rod acquires a negative charge when it is rubbed by a piece of cloth. (1 Mark)

……

6.Explain why a rubber balloon, if rubbed will often stick to the wall where it has been rubbed. (1 Mark)

……

7. State the precaution that is taken when charging a metal object. (1 Mark)

……

8. State two uses of a gold leaf electroscope (2 Marks)

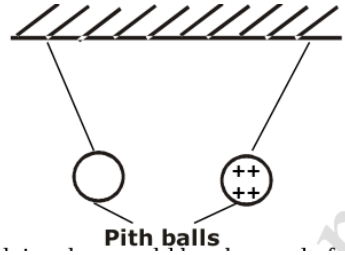
……

9. A sharp point of a pin is held in the bare hands and brought near the cap of a positive charged electroscope. **State** and **explain** the observation made on the electroscope. (2 Marks)

……

……

10. The figure below shows an uncharged pith ball under the attraction of a charged ball.

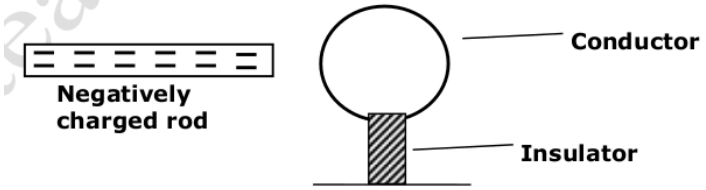


State and explain what would be observed after the two pith ball touch. (2 Marks)

……

……

11. The figure below shows a negatively charged rod placed near an uncharged conductor resting on an insulation support.



a) Show the charge distribution on the conductor.

b) State the effect

I) Of momentarily touching the conductor with a finger while the charged rod is still near the conductor. (1 Mark)

……

II) On the charge distribution of withdrawing the negatively charged rod after momentarily touching the conductor (1 Mark)

……..

12. A plastic rod is rubbed with cotton and it is observed that the rod acquires a negative charge. The same cotton is brought near the cap of positively charged electroscope.

(i) State the observation made on the leaf of the electroscope. (1 Mark)

……..

(ii) Explain the observation (2 Marks)

……

13. State the observation on the leaf of a positively charged electroscope when a negative charge is brought near it. (1 Mark)

……..

14. You are provided with a polythene rod, an Electroscope, two bars; one a conductor and another one an insulator. **Briefly describe** how you will use the electroscope to determine which one is an insulator. (3 Marks)

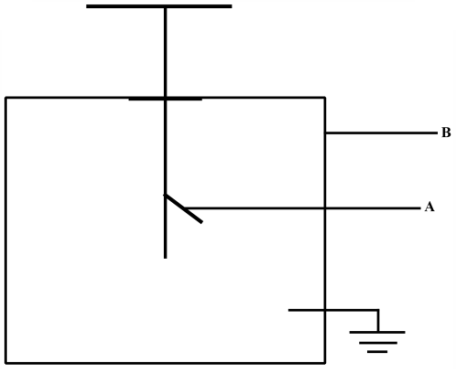
……

……

……

……

15. Figure below shows a gold leaf electroscope.



a) Name the part labeled A. (1 Mark)

……

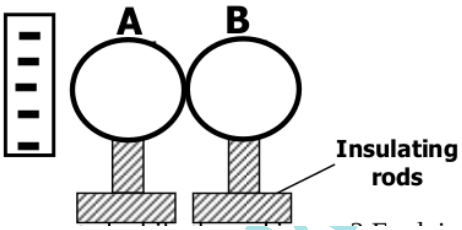
b) State the function of the part labelled B. (1 Mark)

……

16. State the reason why an increase in leaf divergence is the only sure way of determining whether an object is negatively charged using a negatively charged electroscope. (1 Mark)

……

17. Two identical spheres A and B each standing on an insulating base are in contact. A negatively charged rod is brought near sphere **A** as shown below.



In what way will **A** differ from **B** if separated while the rod is near? Explain. (2 Marks)

……

……

18. Why is it safer to carry explosive fuels in metal cans instead of plastic can? (1 Mark)

……

19. An uncharged metal rod brought close to but not touching the cap of a charged electroscope caused decrease in the divergence of the leaf. Explain this observation. (1 Mark)

……

20. A positively charged rod is brought near the cap of a lightly charged electroscope. The leaf divergence first reduces and as the rod comes nearer, it diverges more. State and explain the charge on the electroscope. (3 Marks)

……

……

21. A negatively charged rod is brought near the cap of a lightly charged electroscope. The leaf divergence first reduces but as the rod comes nearer, it diverges more.

(i) State the charge of the electroscope. (1 Mark)

……

(ii) Explain the behaviour of the leaf above. (2 Marks)

……

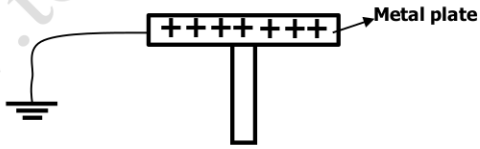
……...

22. The diagram shows a positively charged acetate strip and a negatively charged polythene strip that are freely suspended.

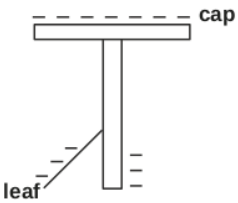
Two rods **X** and **Y** are brought up in turn to these two strips. Rod **X** attracts the acetate strip but repels the polythene strip. Rod **Y** does not repel either the acetate strip or the polythene strip. State the type of charge is on each rod. (2 Marks)

……

23. The figure below shows a positively charged metal plate with an earthing connection. Using an arrow, show the direction of charges through the earth connection and explain the final charge of the plate. (2 Marks)



24. Figure below shows a gold leaf electroscope charged negatively.



State and explain what happens to the leaf when a negative charged rod is brought near the cap without touching it. (2 Marks)

……

……

25. Explain how a positively charged electroscope gets discharged when the cap is touched with a finger. (2 Marks)

……

26. Two metallic spheres **A, B** stand in contact as shown. A positively charged rod is held near sphere **A**.

(i) Show the charge on each sphere when the metallic balls are separated and the rod is removed. (1 Mark)

(ii) Why are the balls supported on insulated stands? (1 Mark)

……

27. Explain what is observed when an uncharged sphere is brought close to a positively charged electroscope. (2 Marks)

……