

TRIAL QUESTIONS FOR O'LEVEL ELECTROSTATICS

1.
 - (a) Describe how you would use a gold leaf electroscope to determine the sign of the charge on a given charged body.
 - (b) Explain how an insulator gets charged by rubbing
 - (c) Sketch the electric field pattern between a charged point and a metal plate
 - (d) Describe how a lightning conductor safe guards a tall building from being struck by lightning.

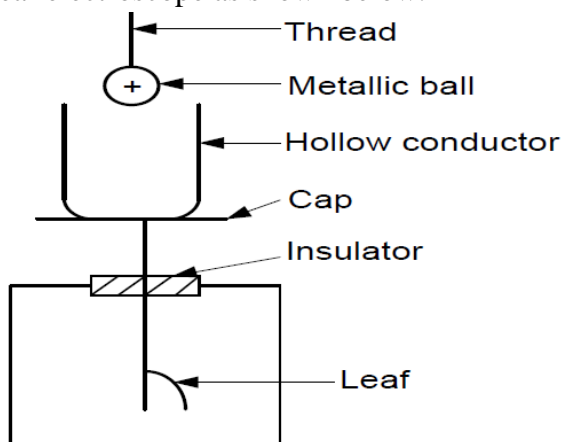
2.
 - (a) What is meant by a conductor and an insulator?. Give an example of each
 - (b)
 - (i) Explain briefly how you can charge a conductor negatively by induction
 - (ii) Describe how it can be confirmed that the conductor in (b) (i) is negatively charged
 - (c) Explain the action of a lightning conductor.

3.
 - (a) What happens when a glass rod is rubbed with
 - (i) Silk?
 - (ii) an identical glass rod?
 - (b) Describe how a gold leaf electroscope may be used to test the nature of the charge on an object
 - (c) Draw the electric field patterns for
 - (i) an isolated negative charge
 - (ii) two oppositely charged parallel plates at a small distance apart
 - (d) Explain why it is not advisable to touch the copper strip of a lightning conductor when it is raining.

4.
 - (a) State two advantages of a nickel – iron accumulator over a lead acid accumulator.
 - (b) Name the gasses evolved during the charging of a lead – acid accumulator .
 - (c) Why is a dry cell called primary cell?

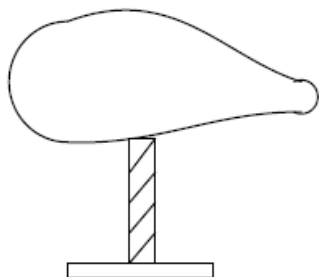
5.
 - (a) State the law of electrostatics.
 - (b) Describe how two identical metal balls may be charged positively and simultaneously by induction.
 - (c) Draw a labeled diagram of a gold leaf electroscope.
 - (d)
 - (i) Explain what happens when a negatively charged rod is brought near the cap of an uncharged electroscope and slowly taken away.
 - (ii) How can an electroscope be used to test whether a material is a conductor or an insulator.
 - (e) What precautions should be taken when carrying out experiments in electrostatics?

6. (a) Explain why a pen rubbed with a piece of cloth attracts pieces of paper.
 (b) A positively charged metallic ball is held above a hollow conductor resting on the cap of a gold leaf electroscope as shown below.



Explain what happens to the leaf of the electroscope as the ball is lowered into the conductor.

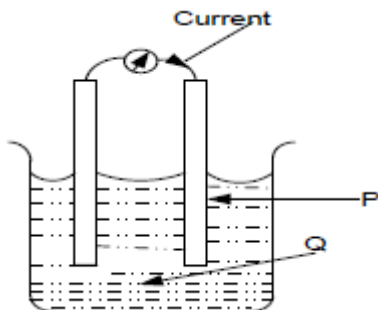
- (c) The figure below shows a conductor supported on an electrical insulator. The conductor is given some positive charge. Show how the charge is distributed on the conductor.



- (d) Sketch the electric field pattern due to two unlike charges P and Q below.



7. (a) (i) What is meant by a secondary cell?
 (ii) Give two examples of secondary cells
 (b) (i) What substance is used to top up the level of the liquid in accumulators?
 (ii) Explain briefly why this is used



The diagram above shows the essential parts of a simple cell. Name the parts labelled P and Q

- (c) Why does the current through the cell eventually stop?