

HOMEWORK ASSIGNMENT**ELECTROSTATICS****MULTIPLE CHOICE**

1. Which group contains substances which can all be charged
 - A. ebonite, glass, wood
 - B. cellulose acetate, copper, lead
 - C. cellulose acetate, glass, polythene
 - D. lead, polythene, cellulose acetate

2. When polythene is rubbed with a cloth, the polythene
 - A. loses electrons
 - B. acquires a negative charge
 - C. gains protons
 - D. acquires a positive charge

3. Which of the following statements is / are correct?
 - I There are only two kinds of charge

 - II When a flannel is used to charge a body by friction the flannel acquires a charge opposite to that acquired by the body.

 - III the magnitude of the charge on a proton is equal to that on an electron.
 - A. I only
 - B. I and II only
 - C. II and III only
 - D. I, II and III

4. When a positively charged body, Q, is brought close to an isolated uncharged body U. Which of the following statements is / are correct concerning what happens?
 - I There is no transfer of charge from Q to U

 - II Net attraction results because U acquires a negative charge

 - III There is some redistribution of electric charge on both Q and U.
 - A. I only
 - B. I and II only
 - C. II and III only
 - D. I, II and III

5. Fig. 10.13 shows a positive charged sphere, Q, which has been brought close to an uncharged body, U.
Which of the diagrams following Fig 10.13 best represents how the charge is distributed after Q is put into position?

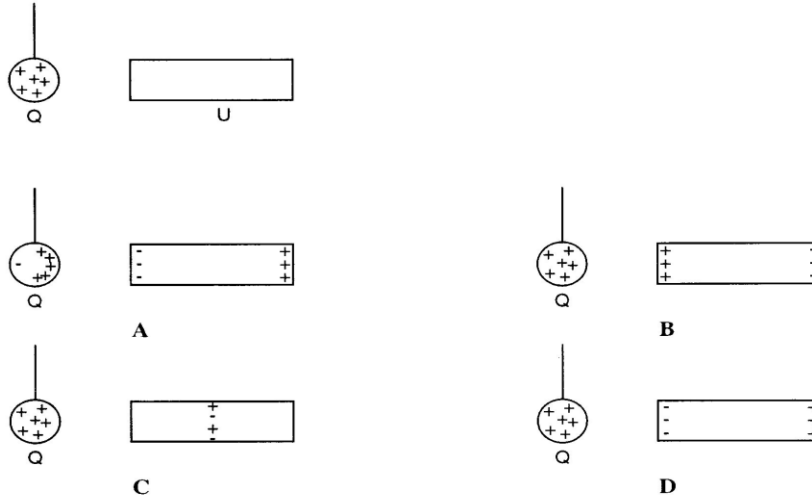


Fig 10.13

FREE RESPONSE QUESTIONS

- By citing specific materials and using diagrams, describe and briefly explain how you would charge a material by employing the same method of friction.
- With the aid of one or more diagrams, briefly explain “*electrostatic induction by separation*”.
- (a) Define the term “*electric field*” and “*the direction of an electric field*”
(b) A fifth form student drew the sketch below (Fig. 10.15) when asked to draw the electric field pattern due to two isolated, identical, small positive charges.

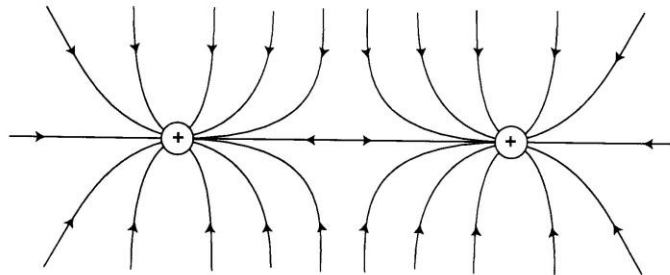


Fig. 10.15 A Student's version

- Comment critically and fully on the student's sketch.
- Redraw the sketch in the way which you think it should have been drawn.