Problem 3) Five styrofoam balls A, B, C, D and E are used in an experiment. Several experiments are performed on the balls and the following observations are made :
(i) Ball A repels C and attracts B.
(ii) Ball D attracts B and has no effect on E.
(iii) A negatively charged rod attracts both A and E.
For your information, an electrically neutral styrofoam ball is very sensitive to charge induction and gets attracted considerably, if placed nearby a charged body. What are the charges, if any, on each ball ?

	A	B	C	D	E
(A)	+	–	+	0	+
(B)	+	–	+	+	0
(C)	+	–	+	0	0
(D)	–	+	–	–	0

Ans :- c

Solution:-
From (i), as A repels C, so both A and C must be charged similarly. Either both are +ve or both are –ve. As A also attract B, so charge on B should be opposite of A or B may be uncharged conductor. From (ii) as D has no effect on E, so both D and E should be uncharged and as B attracts uncharged D, so B must be charged and D must be an uncharged conductor. From (iii), a –vely charged rod attracts the charged ball A, so A must be +ve and from exp. (i) C must also be +ve and B must be –ve.