IB PHYSICS: Electrostatics Review

1. A plastic rod is rubbed with a cloth. At the end of the process, the rod is found to be positively charged and the cloth is found to be uncharged. This involves the movement of

A. positive charge from the cloth to the rod.

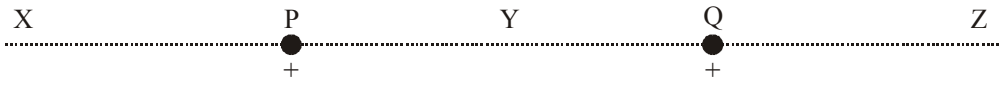
B. positive charge from earth to the cloth.

C. negative charge from the rod to earth.

D. negative charge from earth to the cloth.

(1)

2. Two **positive** point charges P and Q are held a certain distance apart.



At which point(s) could the electric field strength, due to the charges, be zero?

A. X only

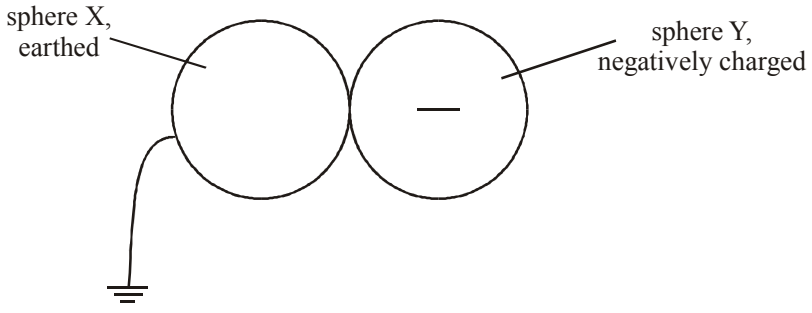
B. Y only

C. Z only

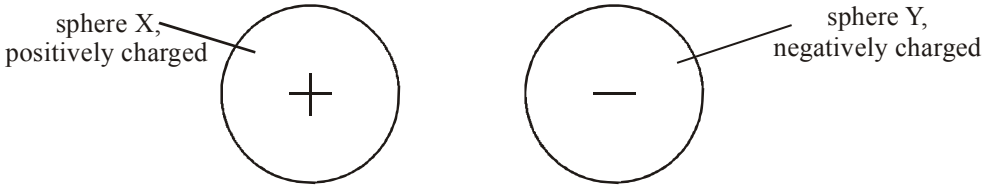
D. X and Z only

(1)

3. Two isolated spheres X and Y of unknown materials are touching one another as shown below.



Sphere Y is negatively charged and sphere X is earthed. The earth connection is removed from sphere X and then the spheres are separated as shown below.

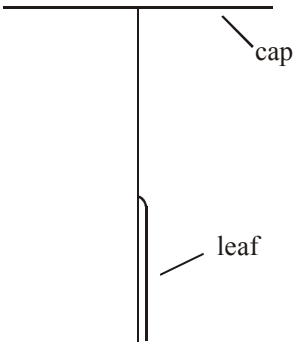


Sphere X is found to be positively charged and sphere Y remains negatively charged.
Which of the following describes the nature of the materials from which the spheres are made?

	Sphere X	Sphere Y
A.	Insulator	Insulator
B.	Insulator	Conductor
C.	Conductor	Insulator
D.	Conductor	Conductor

(1)

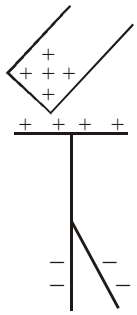
4. The leaf and cap of an uncharged gold-leaf electroscope are shown below.



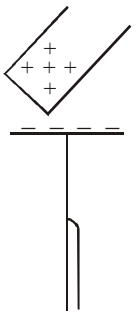
A positively charged rod is brought near to the cap of the electroscope.

Which diagram best shows the distribution of charge on the electroscope?

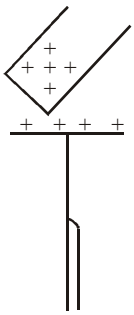
A.



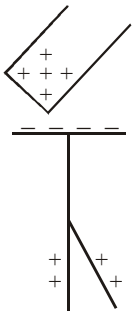
B.



C.

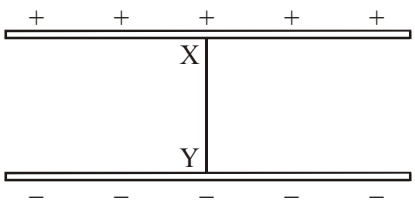


D.



(1)

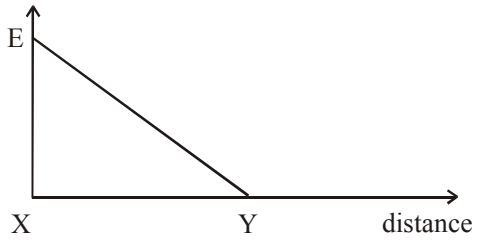
5. The diagram below shows two parallel conducting plates that are oppositely charged.



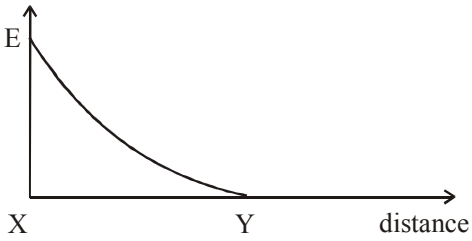
The line XY is perpendicular to the plates.

Which of the following diagrams shows the variation along the line XY of the magnitude *E* of the electric field strength between the plates?

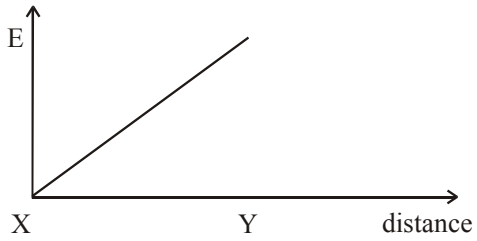
A.



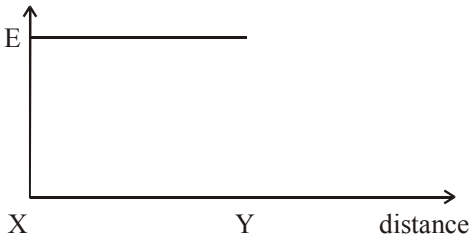
B.



C.



D.



(1)