Electric Charge

Solution 1.a:

Friction causes rubbing between two surfaces of substances together which produces an electric current and thus causes a charge to develop.

Solution 1.b:

The charge developed due to friction is called a static electric charge because it remains still on an object.

Solution 1.c:

When the charged body is taken away, the induced charges disappear. Hence, the charge developed by induction disappears quickly.

Solution 1.d:

If a positively or negatively charged body is brought in contact with the disc of the electroscope, then like charges develop on the leaves and repel each other and fly apart.

Solution 1.e:

When rubbed with the body, the electrons in the cardigan produce a static electric charge which causes the crackling sound.

Solution 2:

1. The charge on an ebonite rod is **negative**.
2. When glass and silk are rubbed on each other, the glass develops a **positive** charge and the silk a negative one.
3. Friction causes the transfer of **negative** particles.

Solution 3.a:

An atom contains either positively or negatively charged particles. The number of positively and negatively charged particles in an atom is equal, and hence, they neutralise each other. Thus, an atom does not have any charge.

Solution 3.b:

Copper is a good conductor of electricity and allows the transfer of charge to another body near it through the movement of electrons, so charge cannot be developed on a copper rod.

Solution 4:

Group 'A'	**Group 'B'**
(a) Glass rod	Positive charge
(b) Ebonite rod	Negative charge
(c) Lightning conductor	Lightning
(d) Electroscope	Charged body

Solution 5:

1. False. When two substances are rubbed on each other, unlike charges are developed on each.
2. False. An atom has both a positive and a negative charge.
3. True
4. False. If the leaves of the electroscope spread only a little, then the charge on them is lesser.