

**Q. 02**      **Is the motion of a charge across junction momentum conserving? Why or why not?**

**Solution:** In the circuit when an electron approaches a junction, in addition to the uniform  $E$  that faces it normally (which keep the drift velocity fixed), as drift velocity ( $v_d$ ) is directly proportional to Electric field ( $E$ ). That's why there are accumulation of charges on the surface of wires at the junction. These produce additional electric fields. These fields alter the direction of momentum. Thus, the motion of a charge across junction is not momentum conserving.