ELECTRIC POTENTIAL AND ELECTRIC POTENTIAL ENERGY

Q.1. **Work done in moving a charge of 6 coulomb between two points is 10 joule. What is potential difference between two points?**

(a) 1/3 volt

(b) 2/3 volt

(c) 5/3 volt

(d) 4/3 volt

Q.2. A particle of mass 1.6g has a charge *e*. Particle is kept at rest at a point A having a potential 10 volt. What is the gain of velocity when it reaches other point B having a potential of 50 volt?

(a) 10^{-7} m/s

(b) 10^{-6} m/s

(c) 10^{-5} m/s

(d) 10^{-4} m/s

Q.3. Consider a point charge Q = +4 μC situated in air at origin. Now find potential difference between two point A [2, 0] m and B [0, 1] m.

(a) 17×10^3 V

(b) 19×10^3 V

(c) 18×10^3 V

(d) 20×10^3 V

Q.4. Find the potential at the centre of the square of side 1 m at four corners of which $q_1 = 10^{-8}$ C, $q_2 = 4 \times 10^{-8}$ C, $q_3 = -5 \times 10^{-8}$ C and $q_4 = 8 \times 10^{-8}$ C are placed.

Q.5. An infinite number of charges each of q are placed along x-axis at x = 1, 2, 4, 8…. Find the potential at x = 0 due to this set of charges.

Q.6. Eight charged water droplets, each with a radius of 1 mm and charge 10^{-9} C combine to form a single drop. Calculate potential of bigger drop.

Q.7. Three point charges 1 C, 2 and 3C are placed at the corners of an equilateral triangle of side 1m. Calculate the work required to move these charges to the corners of a smaller equilateral triangle of side 0.5 m.

Q.8. **Two identical particles, each having a charge of 2×10^{-4} C and mass of 10g, are kept at a separation of 10 cm and then released. What would be the speeds of the particles when separation becomes large ?**