25-2   Electric Potential

Question 557
A particle (m = 2.0 micro-g, q = - 5.0 micro-C) has a speed of 30 m/s at point A and moves, under the influence of a parallel and uniform electric field, to point B where its speed became 80 m/s. What is the potential difference [V(B)-V(A)].
(a)   6.3 V.
(b)   Zero.
(c)   1.1 V.
(d)   - 2.4 V.
(e)   3.5 V.

Question 558
Two equal point charges (Q = 20 micro-C) are located at the vertices of an equilateral triangle of side a = 2 m as shown in Figure 3. What is the work done to bring a 5 micro-C point charge from infinity to the point P?
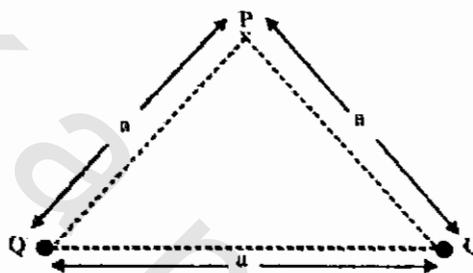

Figure 3

(a)   0.5 J
(b)   0.9 J
(c)   2.9 J
(d)   1.8 J
(e)   7.2 J

Question 559
An electron moves from point i to point f in the direction of a uniform electric field. Which one of following statements is CORRECT?
(a)   the electric field at point f is less than that at point i
(b)   the electric potential increases
(c)   The potential energy of the electron decreases
(d)   the speed of the electron at point i is less than that at point f
(e)   The potential energy of the electron increases

Question 560
Two large parallel plates are connected to a 100 V power supply. An electron starts from rest at one plate and accelerates toward the other. The speed of the electron when it hits the second plate is
(a)   2.1*10**7 m/s
(b)   3.5*10**6 m/s
(c)   5.9*10**6 m/s
(d)   6.0*10**5 m/s
(e)   7.8*10**6 m/s