Home Assignment :

1) a) Some kind of charged particles.

b) only electrostatic force

c) conductor shields any charge within it from electric field created outside the conductor.

d) The particle's velocity doesnot change.

e) $V_{max} = \dfrac{qBR}{m}$

f) maximum speed attained by a charged particle is limited by the relativistic variation of mass with speed.

2) a) Italian electricity researcher Luigi Galvani

b) To detect and measure small electric current.

c) $S_i = \dfrac{\theta}{i} = \dfrac{NBA}{C}$

d) May not change the voltage sensitivity.

e) $i = \left(\dfrac{C}{BNA}\right)\theta$

f) directly proportional to $\sin\theta$

3) a) Both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

b) Both A and R are true and R is the correct explanation.

c) Both A and R are true and R is the correct explanation.

e) Both A and R are true but and R is not the correct explanation.

Reason : As it is connected in parallel, if the shunt resistance is increased, the range of ammeter decreases.

d) Both Assertion and reason are false.

soln: In a non-uniform magnetic field, a torque and a net force both act on the dipole. If magnetic field is uniform, net force on dipole would be zero.

f) Both Assertion and Reason are true but R is not the correct explanation.

Reason: Galvanometer is very sensitive so it may cause damage if value of current is increased.

4Y) voltmeter is connected in parallel and current through it is negligible.

2) Infinity.

3) more

4) $i = \left(\dfrac{c}{BNA}\right)\theta$

5) $S_i = \dfrac{\theta}{i} = \dfrac{NBA}{C}$