

# Moving charges and magnetism

## Home Assignment

1) i) (a) Some kind of charged particles

ii) (c) both electrostatic and magnetic force called Lorentz force.

iii) (a) Conductor shields any charge within it from electric field created outside the conductor.

iv) (c) The particle's velocity does not change.

v) (a)  $v_{max} = \frac{qBA}{m}$

2) i) (a) Italian researcher electricity researcher Luigi Galvani.

ii) (c) to measure any amount of electric current.

iii) (c)  $S_i = \theta_i = \frac{C}{NBA}$

iv) (b) may not change the voltage sensitivity

v) (c)  $i = \left( \frac{C}{BNA\theta} \right)$

3) i) (A) Both are true, and Reason is the correct explanation of Assertion

ii) (A) Both are true and Reason is the correct explanation of Assertion

iii) (A) Both are true and Reason is correct explanation of Assertion

iv) (D) Both Assertion and Reason are false. ~~Assertion~~

Explanation:-

When magnetic dipole is placed in a non-uniform magnetic field, ~~Both~~ Both torque and force act on it. But when it is in uniform magnetic field, only torque acts on it.

v) (B) Both are true but Reason is not correct explanation of Assertion.

vi) (A) Both are true and Reason is correct explanation of Assertion.

4) i) (a) A voltmeter is connected in parallel and current through it is negligible.

ii) (c) Infinity (Resistance of an ideal voltmeter is infinite as voltmeter can measure the potential difference across two points when no current is passing through it. So, to make current 0, resistance is infinite.)

ii) (a) more