

# Home Assignment

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

(ii) (a) Only Electrostatic force

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

(iv) (b) The particle's velocity changes.

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

(vi) (b) Max speed attained by a charged particle is limited by the relativistic variation of mass with speed.

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

(ii) (a) To detect and measure small electric current.

(iii) (a)  $S_i = \frac{\theta}{i} = \frac{NBA}{c}$

(iv) (a) None of these

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

(vi) (b) Independent of  $\theta$

3) (i) (B) Both A and R are true but R is not a correct explanation.

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

(iii) (A) Both A and R are true and the Reason is the correct explanation.

- (iv) (D) Both A and R are false.  
 (v) (B) Both A and R true, but R is not the correct explanation.  
 (vi) (A) Both A and R are true, R is the correct explanation.

(A) (1) (A) A voltmeter is connected in parallel and current through it is negligible.

(ii) (C)  $\infty$

(iii) (A) More

(iv) (A)  $i = \left( \frac{C}{BNA} \right) Q$

(v) (A)  $s_i = \frac{Q}{C} = \left( \frac{NBA}{C} \right)$