

HOME ASSIGNMENT

CHIRANJIB DASH

XII - DB - 9882

TOPIC:- MOVING CHARGES AND
MAGNETISM.

(1)

MCO

1) i) b) Cyclotron is used to accelerate any kind of charged particles

ii) c) Both electrostatic and magnetic force called Lorentz force

iii)

iv) b) The particle's velocity changes.

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

vi) \Rightarrow electrons are best particles to be accelerated

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

ii) a) to detect and measure small electric current by deflection of moving coil

900/111) a) $S_1 = \frac{\theta}{I} = \frac{NBA}{C}$

i) b) may not ~~necessi~~ change the voltage sensitivity because ~~voltage~~ ~~sensitivity~~ ~~depends~~ depends on current sensitivity and the resistance of galvanometer. If we increase the current sensitivity then it is not certain that voltage sensitivity will be increased.

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

vii) c) zero

2) 3) ?

pp) A) Both Assertion and Reason are true but reason is ~~not~~ ^{the} correct explanation of the Assertion.

ppp) A) Both Assertion and Reason are true and Reason is correct.

Because every current element on the irregular shaped wire having symmetric elements carrying current in opposite direction is causing repulsion and hence the area enclosed by the wire increases.

ix) B) BOTH Assertion and Reason are true but R is not the correct explanation of A.

x) A) BOTH Assertion and Reason are correct and Reason is correct explanation for Assertion.

A Galvanometer is a very sensitive device, it gives a full scale deflection for the current of the order of microampere. For measuring current, the galvanometer has to be connected in series, as it has a large resistance, will change the value of current.

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

2) c) Infinite.

In an ideal situation, where the voltmeter is able to measure the actual potential difference across two points there should be no current passing through it and hence its resistance should be infinite.

3) a) more

Because large part of the main current will pass through the coil of the galvanometer which will work as a smaller range ammeter. Hence correct option is (a).

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

5) a) $s_i = \frac{\theta}{i} = \frac{NBA}{c}$