17/7/21

Date :

Home Assignment - 6

1. (a) Cyclotron is used to accelerate
→ Both positively and negatively charged particles.

A cyclotron is an apparatus in which atomic and subatomic charged particles are accelerated by an alternating electric field while following a spiral or circular path in a magnetic field. A cyclotron is used to accelerated both positively and negatively charged particles but a neutral particle (e.g neutron) cann't be accelerated in cyclotron.

(b) The force that accelerates the particles in the ~~tyt~~ cyclotron is
→ Only magnetic force

(c) Choose the correct option
→

(d) Inside a dee
→

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(e) In a cyclotron
→

8. (a) Galvometer was named after
→ Italian electricity researcher Luigi Galvani who discovered galvanometer.

(b) Galvometer is used
→ to detect and measure small electric current.

(c) Choose the correct option for current sensitivity of galvometer.
→ $S_i = \theta / i = NBA / C$

(d) Increasing the current sensitivity
→ mayn't change the voltage sensitivity

(e) Choose the correct option for design formula of galvanometer
→ $i = \left(\frac{C}{NBA}\right)\theta$

(f) In the galvanometer the radial magnetic field makes the magnetic torque
→

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3. (a) A

(b)

(c) If both assertion and Reason are true and Reason is correct explanation of Assertion.

(d) Both Assertion and Reason are incorrect. In a non-uniform magnetic field, both a torque and net force acts on the dipole. If magnetic field were uniform, net force on dipole would be zero.

(e) Both Assertion and Reason are true but R isn't correct explanation of Assertion.

4. 1. An ammeter is connected in series in a circuit and the current through it is negligible.

2. infinity

3. more

4. $i = \left(\frac{C}{BNA}\right)\theta$

5. $S_i = \frac{\theta}{i} = \frac{NBA}{C}$

3. (f) If both assertion and reason are true but reason is not correct explanation of assertion.

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