



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL



PERIODIC TEST-1

PHYSICS (SET-1)

Class: XII

Date: 10.06.26

Admission no:

Time: 1hr

Max Marks: 25

Roll no:

General Instructions:

- There are three sections A, B, and C with 13 questions in total, Section A has 5 Multiple Choice Questions of one mark each, Section B has 4 questions of two marks each and Section C has 4 questions of three marks each.
- All questions are compulsory.
- Calculators are not allowed.

Section A

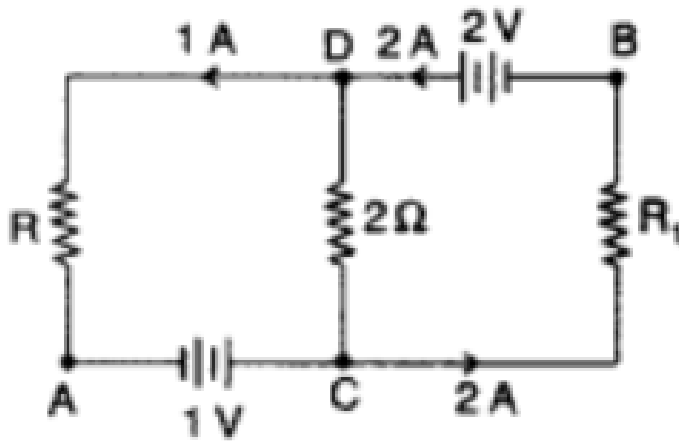
- The number of electrons passing through a wire per minute when current is 320 mA is:
(a) 1.2×10^{20} (b) 1.2×10^{19} (c) 6.0×10^{20} (d) 3.2×10^{19}
- The direction of conventional current is:
(a) Electron flow direction (b) Opposite to electron flow
(c) Random direction (d) No direction
- SI unit of magnetic flux is:
(a) Tesla (b) Weber (c) Henry (d) Ampere
- The magnetic force on a stationary charge is:
(a) Maximum (b) Minimum (c) Zero (d) Infinite
- Which of the following will experience a maximum force, when projected with the same velocity perpendicular to the magnetic field: (i) α -particle, and (ii) β -particle?
(a) Both α -particle and β -particle (b) None
(c) β -particle (d) α -particle

Section B

- For wiring in the home, one uses Cu wires or Al wires. What considerations are involved in this? 2
- Two cells of emf 10V ($r = 2\Omega$) and 6V ($r = 4\Omega$) are connected in opposition. Find current. 2
- Using the concept of force between two infinitely long parallel current carrying conductors, define one ampere of current. 2
- Depict the trajectory of both types of charged particle moving with velocity v as it enters a uniform magnetic field perpendicular to the direction of its motion. 2

Section C

10. An ammeter of resistance 0.6Ω can measure current upto 1.0 A . Calculate 3
 (i) The shunt resistance required to enable the ammeter to measure current up to 5.0 A .
 (ii) The combined resistance of the ammeter and the shunt.
11. Using Ampere's circuital law, obtain an expression for the magnetic field along the axis of a current carrying solenoid of length l and having N number of turns. 3
12. Two metallic wires of the same material have the same length but cross-sectional area is in the ratio $1:2$. They are connected 3
 (i) in series and
 (ii) in parallel.
 Compare the drift velocities of electrons in the two wires in both the cases (i) and (ii).
13. In the given circuit, assuming point A to be at zero potential, use Kirchoff's rules to determine the potential A at point B.



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-----BEST OF LUCK-----