Worksheet

GRADE 12

Concept: Biot-Savart law & Ampere Circuital Law

Level-A

1. The line integral of .....around any .....circuit is equal to μ_0 times the total ..... passing through the circuit.
2. The SI unit of magnetic field is.....
3. Direction of magnetic field due to a current carrying straight conductor can be determined by.....
4. Clockwise current in a loop produces..... magnetic field.
5. The magnetic field due to a bar magnet is equivalent to the magnetic field due to a current carrying .....

Drag Answers : Magnetic field closed current tesla Right hand rule Inward Solenoid

Level-B

1. State whether the following statements are true & false.
   a) The magnetic field due a current carrying solenoid is independent over the nature of the material inside it.

   b) Anticlockwise current in a loop produces an outward magnetic field.

   c) $1\ T = 10^4\ G$

   d) Gauss law is used to find the magnetic field due a current carrying conductor.

   e) The ratio of magnetic field due to a current carrying straight conductor at a distance from the ends of conductor to its field at the same distance from the mid-point is ½.

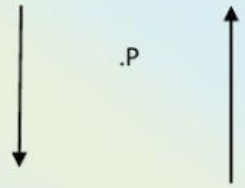
2. Match the following.

	Section A	Section B
i)	Magnetic field due to a infinite long current carrying straight conductor	i) 0
ii)	Magnetic field due to a current carrying circular loop at its centre	ii) $\frac{\mu_0 I}{2\pi a}$
iii)	Magnetic field due to a current carrying solenoid inside it	iii) $\frac{\mu_0 I}{2a}$
iv)	Magnetic field due to a current carrying toroid outside it	iv)) $\mu_0 In$

Level-C

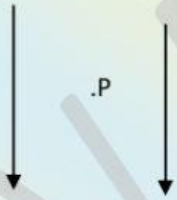
1. Find the magnetic field at point P in the following cases when current I is flowing.

i)



SAY YOUR ANSWER:

ii)



SAY YOUR ANSWER:

iii)

SAY YOUR ANSWER:

iv)  .P

SAY YOUR ANSWER:

iv)  .P

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