

Static Magnetic Fields and Magnetic Forces - Practice Questions

Multiple Choice Questions:

1. The SI unit of magnetic field is: (a) Tesla (b) Weber (c) Henry (d) Ampere - Answer: (a)
2. Magnetic field around a straight current-carrying conductor forms: (a) straight lines (b) circles (c) spirals (d) random paths - Answer: (b)
3. Direction of magnetic field is given by: (a) Ohm's law (b) Fleming's rule (c) Right-hand thumb rule (d) Lenz's law - Answer: (c)
4. Force on a moving charge in magnetic field is: (a) qE (b) $qvB \sin\theta$ (c) q/B (d) $q+B$ - Answer: (b)
5. If velocity is parallel to magnetic field, force is: (a) maximum (b) zero (c) infinite (d) constant - Answer: (b)
6. Magnetic field lines never: (a) form loops (b) intersect (c) curve (d) spread - Answer: (b)
7. Unit of magnetic flux is: (a) Tesla (b) Weber (c) Volt (d) Joule - Answer: (b)
8. Force on a current carrying conductor is given by: (a) BIL (b) $BIL \sin\theta$ (c) IL/B (d) VIL - Answer: (b)
9. Fleming's left-hand rule is used to find: (a) current (b) voltage (c) force direction (d) resistance - Answer: (c)
10. Magnetic field inside a long solenoid is: (a) zero (b) uniform (c) decreasing (d) circular - Answer: (b)

Fill in the Blanks:

1. Magnetic field is produced by moving _____. Answer: charges
2. SI unit of magnetic field is _____. Answer: Tesla
3. Magnetic field lines form closed _____. Answer: loops
4. Force on a moving charge is maximum when velocity is _____ to field. Answer: perpendicular
5. Direction of force is given by _____ rule. Answer: Fleming's left-hand
6. Magnetic flux is measured in _____. Answer: Weber
7. Magnetic force on charge is _____ to both velocity and field. Answer: perpendicular
8. Current-carrying conductor in magnetic field experiences a _____. Answer: force
9. Magnetic field inside a solenoid is _____. Answer: uniform
10. A stationary charge experiences _____ magnetic force. Answer: no