

Magnetic Effects of Electric Current

Quick Study Guide

HOW TO USE THIS GUIDE

HIGHLIGHTED TEXT SHOWS IMPORTANT POINTS

★ MARKS HIGH-FOCUS TOPICS

📝 INDICATES EXAM TIPS

⚠️ SHOWS COMMON ERRORS

💡 GIVES QUICK TIPS

MAGNETIC FIELD

Mnemonic: "COMPASS GAME"

C	Current flowing	G	Grip rule use
O	Oersted found it	A	Apply right hand
M	Magnetic lines	M	Magnetic field lines
P	Pattern circular	E	Easy to remember
A	Around wire		
S	Straight conductor		
S	Shows direction		

Remember As:

CURRENT KA CHAKKAR

- Like chai stirring:
- * Current = Spoon movement
- * Field = Chai movement
- * Direction = Stirring direction

Common Errors:

- Wrong field direction
- Incorrect rule application
- Missing field lines
- Direction confusion

RIGHT-HAND RULES

Mnemonic: "THUMB RULE"

T	Thumb shows current	R	Right hand only
H	Hold wire straight	U	Understand flow
U	Use right hand	L	Lines of force
M	Magnetic field	E	Encircle wire
B	Bend fingers		

Maxwell's Cork Rule:

SCREW DRIVER

- *S*: Screw direction
- *C*: Current direction
- *R*: Rotate right
- *E*: Easy method
- *W*: Wire straight
- *D*: Direction check
- *R*: Right hand use
- *I*: Inside out
- *V*: Verify field
- *E*: Easy recall
- *R*: Remember direction

SOLENOID & ELECTROMAGNET

Mnemonic: "COIL MASTER"

C	Coil of wire	M	More turns = Strong
O	Organize turns	A	Arrange properly
I	Iron core inside	S	Strengthen field
L	Lines magnetic	T	Temporary magnet
		E	Electricity needed
		R	Remember poles

Field Pattern:

MAGNET BABA

- *M*: Middle strongest
- *A*: Axis aligned
- *G*: Gap between turns
- *N*: North-South poles
- *E*: End to end
- *T*: Through center
- *B*: Both poles clear
- *A*: Axis important
- *B*: Better with iron
- *A*: Align properly

FLEMING'S RULES

Mnemonic: "LEFT DANCE"

L	Left hand use	D	Direction of current
E	Easy to remember	A	Arrange fingers
F	First finger (Field)	N	Ninety degrees
T	Thumb (Motion)	C	Current second finger
		E	Everything perpendicular

(Right Hand Rule)

RIGHT SHOW

- *R*: Right hand use
- *I*: Input current
- *G*: Generator rule
- *H*: Hold properly
- *T*: Thumb motion
- *S*: Second finger field
- *H*: Help in dynamo
- *O*: Observe direction
- *W*: Work principle

ELECTRIC MOTOR

Mnemonic: "MOTOR KING"

M	Moving coi	K	Keep rotating
O	Opposite poles	I	Inside magnetic field
T	Torque produces	N	North-South poles
O	Opposite current	G	Generate motion
R	Rotation continuous		

Working Parts:

SPLIT GAME

- *S*: Split ring
- *P*: Permanent magnet
- *L*: Loop of wire
- *I*: Inside field
- *T*: Torque action
- *G*: Good brushes
- *A*: Armature turns
- *M*: Magnetic field
- *E*: Energy converts

AC GENERATOR

Mnemonic: "BIJLI BOSS"

B	Brushes use	B	Both ways current
I	Induced current	O	Oscillating
J	Just rotating	S	Slip rings
L	Loop in field	S	Source of AC
I	Into AC current		

Remember As

ROTATE KARO

- *R*: Rotating loop
- *O*: Opposite poles
- *T*: Turn armature
- *A*: Alternating EMF
- *T*: Through rings
- *E*: EMF induced
- *K*: Keep turning
- *A*: Alternating current
- *R*: Rings collect
- *O*: Output AC



DOMESTIC CIRCUIT

Mnemonic: "GHAR KA CURRENT"

G	Green = Earth	C	Circuit breaker
H	Hot wire (Live)	U	Use proper wire
A	Ampere rating	R	Red is danger
R	Red = Live	R	Rating check
K	Keep safety	E	Earth important
A	Appliances connect	N	Neutral wire
		T	Three wires

Color Code:

WIRE TEEN

- Red/Brown = Live
- Black/Blue = Neutral
- Green = Earth

QUICK REVISION CHECKLIST

Before Exam:

- ✓ Magnetic field concepts
- ✓ Right-hand rules
- ✓ Fleming's rules
- ✓ Motor principle
- ✓ Generator working
- ✓ Domestic wiring
- ✓ Safety rules

Scoring Tips:

1. Draw neat diagrams
2. Show field lines
3. Mark directions
4. Write proper rules
5. Give applications

HIGH FOCUS AREAS

1. Magnetic Field (5 marks)
2. Fleming's Rules (5 marks)
3. Right Hand Rule (5 marks)
4. Electric Motor (4 marks)
5. Generator (4 marks)

