

AAFAQ ACADEMY – KASUR

Paper: Physics

Chapter (14)
ELECTROMAGNETISM

Class: F.Sc. Part – II

Name: _____ Roll No: (in words) _____

MORNING GROUP

OBJECTIVE TYPE

Total Marks: 11

Paper Code: _____

Total Time: 10 Minutes

NOTE: Write your **Roll No.** in space provided. Using lead pencil will result in loss of marks.

Q.No. 1: You have four choices for each objective type question as A,B,C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Sr. No.	QUESTION	A	B	C	D
1.	weber has the dimensions of	$V \cdot s^{-1}$	$V^2 \cdot s^{-1}$	$V \cdot s^{-2}$	$s \cdot V$
2.	When the magnetic field and vector area are perpendicular, then magnetic flux will be	Maximum	Minimum	Half	Double
3.	The direction of force on a current carrying conductor in a uniform magnetic field will be in the direction of	Current	Length of the conductor	Magnetic field	In the direction of $\vec{L} \times \vec{B}$
4.	A magnetic compass will be deflected if it is kept near a	Charge at rest	Charge in motion	No change	May be deflected or not
5.	Amperean path around a straight conductor is	Circular path	Rectangular path	Closed path	Any path
6.	The energy resides in a current carrying conductor is in the form of	Gravitational field	Electrostatic field	Electromagnetic field	Magnetic field
7.	The electron gun in CRO consists of	A filament	A cathode	Three anodes	All of the above
8.	What is the current in a wire of $10cm$ long at right angle to a magnetic field of $0.5T$ when force acting on the wire is $5.0N$?	10A	50A	500A	100A
9.	To measure the potential difference, voltmeter always connected in	Series	Parallel	Either parallel or series	None of these
10.	Which of the following is not deflected by magnetic field?	α - particle	β - particle	Positron	None of these
11.	The sensitivity of the galvanometer can be increased by decreasing the	Magnetic field	Number of turns of coil	Area of the coil	Torsional constant

SUBJECTIVE TYPE

Total Marks: 18

Time Allowed: 0 Hours 50 Minutes

SECTION – I (SHORT QUESTIONS)

2. Attempt any FIVE questions. (5 × 2 = 10) Marks

- i. Suppose that a charge q is moved in a uniform magnetic field with velocity \vec{v} . Why is there no work done by the magnetic force that acts on the charge q ?
- ii. A loop of wire is suspended between the poles of a magnet with its plane parallel to the pole faces. What happens if a direct current is put through the coil? What happens if an alternating current is used instead?
- iii. An electron is moving along the axis of a solenoid carrying a current. Does any electromagnetic force act on the electron?
- iv. Suppose that a charge q is moving in a uniform magnetic field with a velocity v . Why is there no work done by the magnetic force that acts on the charge q ?
- v. How can you use a magnetic field to separate isotopes of a chemical element, explain?
- vi. Differentiate between magnetic flux and flux density.
- vii. Why the resistance of ammeter should be very low?

SECTION – II (ESSAY TYPE) Attempt given question

- 3. Do as directed...**
 - i. State principle of galvanometer. Find the torque act on a rectangular current carrying coil placed in a uniform magnetic field. (5)
 - ii. What current should pass through a solenoid that is $0.5m$ long with 10000 turns of copper wire so that it will have a magnetic field of $0.4T$? (3)

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SECTION – III (Practical)

4. (a) Write answer of TWO questions. (2×2=4)
- What is internal resistance of a cell? Give its units.
 - Give principle of potentiometer.
 - Find the internal resistance of cell mathematically.
4. (b) Write procedure to determine the internal resistance of a cell by using potentiometer. (3)
4. (c) Answer the following questions on the basis of graph drawn between potential difference (V) and charge (Q). (4)
- What you conclude from the graph?
 - Find the capacitance of capacitor from the graph.

Good Luck
Ch. Khalid Mahmood Ashraf