Half Yearly Examination

Subject : Physics

Class : XII

Time : 3 hrs MM : 75

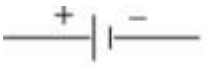
Q.1 Objective type questions. **(1×5=5)**

1. Electrical cell is a device which changes .....into Electrical energy.

   (a) Potential energy (c) Chemical energy

   (b) Kinetic energy (d) Mechanical energy

2. Battery Symbol is : बैट्री की संकेत क्या है।

   (a)  (c) 

   (b)  (d) 

3. Transformers are classified in ..... (ट्रॉसफार्मर कितने प्रकार के होते है?)

   (a) 2 types (b) 3 types

   (c) 4 types (d) More then 2 types

4. The magnetic effect of an electric current in discovered by.

   (a) Fleming (b) Parading

   (c) Ampere (d) Crested

5. Cathode rays are :

   (a) Electromagnetic waves (b) Flow of neutrons

   (c) Flow of electrons (d) Name of these

Q.2 Fill in the blanks. **(1×5=5)**

1. The Resistance of an ideal voltmeter is .....

2. Weber / m^2 is unit of .....

3. A current carrying solenoid behave like a .....

4. The S.I. unit of intensity of electric field is .....

5. The main function of tank circuit is to produce .....

Q.3 Marks each. **(2×10=20)**

1. Explain the principle of moving coil galvanometer.
2. What are Diodes and its uses?
3. What do you mean by uniform electric field and. non uniform electric field?
4. What is electric dipole? Give an example?
5. Write Difference between Potential & Potential Difference.
6. Define Capacitor and factors affecting its property.
7. State Kirchoff's Law and discuss Wheatstone bridge by using it.
8. Why the resistance of an ammeter should be less?
9. Define curie temperature and Curie point.
10. How are electromagnetic waves produced?

Q.4 Three marks each **(3×5=15)**

1. Why is ozone layer useful for sustain of life on the earth?
2. What is Q factor? Write its expression and obtain the condition for its maximum value.
3. What is meant by warless current? Can we get it in real practice?
4. What is d.c. motor/ Explain back e.m.f. produced is motor.
5. What is mutual induction?

Q.5 Match the following. **(2×5=10)**

	'A'		**'B'**
1.	Unit of self inductance	a.	Mutual Induction
2.	Unit of Magnetic flux	b.	Henry
3.	Faraday second Law of electromagnetic induction	c.	Weber
4.	Lenz's Law	d.	$e = \frac{-d\phi}{dt}$
5.	Transformer	e.	Direction of induced current.

Q.6 Five Marks Each. **(5×4=20)**

1. Derive the expression of the magnetic field at a point on the magnetic axis.
2. What is shunt? If the resistance of galvanometer is Rg, Calculate the value of shunt carrying current $\cap$ times the current flowing through the galvanometer.
3. What do you understand by combination of cells? How are cells combined in parallel? How can we achieve maximum current from this combinations?
4. The specific resistance of nichrome is 100 micro-ohm x cm. How much length of the wise of diameter of 0.2 mm should be taken to make a coil of resistance 20Ω