WORKSHEET 2

CHAPTER 10 – ELECTROMAGNETIC

A. Tick (✓) the correct option.

1. The magnitude of AC can be reduced using a
   a. armature. b. choke coil. c. brush. d. none of these.
2. DC motor converts electrical energy into
   a. mechanical energy. b. chemical energy. c. tidal energy. d. none of these.
3. In Fleming's left-hand rule, the thumb indicates the direction of
   a. force. b. magnetic field. c. current. d. electric field.
4. The polarity of an electromagnet can be reversed by changing the direction of
   a. rheostat. b. wire. c. current. d. none of these.
5. The region around a current-carrying conductor where magnetic effect due to it can be experienced is called
   a. electric field. b. magnetic field line. c. electromagnet. d. magnetic field.

B. Fill in the blanks.

1. The path which a north pole would follow is called a _____
2. Magnetic field lines emerge from _____ and terminate at _____
3. The magnetic field increases if radius of the loop is _____
4. The magnetic field of a _____ cannot be changed.
5. An electric motor consists of a rectangular coil of insulated copper wire wound on a soft iron core known as _____

C. State whether the following statements are true or false.

1. The SI unit of force is newton (N).
2. AC generator works on the principle of electromagnetic induction.
3. The direction of motion of the conductor in a DC motor is given by Fleming's right-hand rule.
4. Secondary coil of the step-down transformer is heavily insulated.
5. Thinner wire is used in the secondary coil of step-up transformer.

D. Match the following.

1. Direct current	used for magnetizing steel
2. AC generator	mutual inductance
3. Alternating current	fixed polarities
4. Transformer	electromagnetic induction
5. Electromagnet	polarities are not fixed

Name: ..... Teacher's signature: .....

Class: X ..... Date: .....

© Ratna Sagar

E. Answer the following questions.

Very short answer questions

1. Give are use of step-up transformer.
2. Why is the core of a transformer laminated?

Short answer questions

1. How can we reduce the magnitude of AC?
2. What is a transformer?

Long answer questions

1. Differentiate between alternating current and direct current.
2. What are the ways of increasing induced e.m.f. in an AC generator?

© Ratna Sagar

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. b
2. a
3. a
4. c
5. d

B. Fill in the blanks.

1. magnetic field line
2. north pole, south pole
3. decreased
4. permanent magnet
5. armature

C. State whether the following statements are true or false.

1. T
2. T
3. F
4. F
5. T

D. Match the following.

1. Direct current	fixed polarities
2. AC generator	electromagnetic induction
3. Alternating current	polarities are not fixed
4. Transformer	mutual inductance
5. Electromagnet	used for magnetizing steel

E. Answer the following questions.

Very short answer questions

1. They are used for the production of X-rays in X-ray tubes.
2. The core is laminated to reduce the eddy current loss in the transformer.

Short answer questions

1. The magnitude of AC can be reduced by using a choke coil, without involving loss of energy.
2. Transformer is a device used to convert low alternating voltage at higher current into high alternating voltage at lower current and vice versa.

Long answer questions

1. Refer Table 10.2, Page 216 of the textbook.
2. The induced e.m.f. can be increased by
   i. increasing the speed of rotation of the coil.
   ii. increasing the number of turns in the coil.
   iii. winding the coil on a soft iron core.
   iv. using strong magnets.
   v. using coil with larger area.

© Ratna Sagar