

ELECTRICAL MACHINES-I
3rd Exam/Elect/5801/Nov'24
(For 2023 Batch)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. The magnitude of induced _____ is directly proportional to the rate of change of _____
- b. In generating action current flows in _____ Direction as that of induced E.M.F.
- c. For step up transformer the transformation ratio is _____ than unity.
- d. Transformers are always rated in _____
- e. In d.c. motor, armature resistance control is used to give speeds _____ than rated speed.
- f. The brushes for commutator are made of _____
- g. Distribution transformers are designed to have maximum efficiency nearly at _____ of full load.
- h. The colour of silica gel is _____ when dry and _____ when wet.
- i. A 4 pole DC lap winding will have _____ parallel paths.
- j. The yoke of a d.c. machine is made of _____
- k. Eddy current is part of copper losses. (T/F)
- l. Commutator is made of carbon. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Write short note on electromagnetic induction.
- ii. An electrical motor or generator is also called electromechanical energy conversion device, why?
- iii. What is back emf? Explain its significance.
- iv. Parallel operation of the transformers in the power system is necessary. Why?
- v. State the working principle of transformer.
- vi. What is the difference between power transformer and distribution transformer?
- vii. Explain the function of commutator in generator.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. What are the various energy losses in a DC machines.
- b. Give points of difference between motor and generator.
- c. Explain Ward Leonard method of speed control of DC motor.
- d. Write some advantages and disadvantages of auto transformers.
- e. Explain and draw the different characteristics of DC series motor.