

Code: A-E616113-A

I SEMESTER EXAM - 2025-26

2 x 90

Std.: XI

Sub: Electrical Maintenance - Paper II

Marks: 40

Date:

Roll No.: _____

Time: 2½ hrs

Q.1 Fill in the blanks. (any four)

4

- a) 'U' shaped magnets are used in _____.
i) loudspeakers ii) moving coil instruments
iii) making smaller magnets
- b) The transformer core is made of _____.
i) Silicon steel stampings ii) Copper
iii) aluminium
- c) The polarity of magnet depends upon _____.
i) Voltage ii) Shape of coil
iii) Direction of current
- d) _____ is a machine which converts mechanical energy into electrical energy.
i) DC Generator ii) Transformer
iii) DC Motor
- e) _____ generators are used in DC long transmission line.
i) DC Series Generator ii) DC Shunt Generator
iii) DC Compound Generator
- f) _____ converts ac to dc.
i) Yoke ii) Armature
iii) Commutator

Q.2 Attempt : (Any Three)

(6)

- a) Draw a neat and labelled diagram of DC Generator.
- b) What are the different types of armature winding.
- c) Explain the function of NVC and OLC.
- d) A transformer has primary voltage of 8600V and a secondary voltage of 250V. It has 50 secondary turns. Find the number of turns in primary and transformation ratio.

Q.3 Attempt : (Any Three)

(6)

- a) Draw a neat and labelled diagram of a three point starter with DC shunt motor.
- b) A transformer 500/250V, 1 KVA, 50Hz is connected to 500V supply. Calculate the Full load primary and secondary currents.
- c) What are the methods of speed control in a DC Motor.
- d) What is a transformer? On what principle does it work ?

Q.4 Attempt : (Any Four)**(12)**

- a) Classify the transformers according to:
 - i) Voltage
 - ii) Core
 - iii) Phase
- b) State Flemings Right hand rule with diagram.
- c) Explain DC Shunt Generator with Diagram.
- d) An 8 pole lap wound armature has 800 conductors and a flux of 15 mWb per pole. Find the emf induced in an armature when running at a speed of 500 rpm. Also, calculate the emf generated if the conductor is wave wound.
- e) State and explain Lenz's law with diagrams.

Q.5 Attempt : (Any four)**(12)**

- a) State the advantages of electromagnetism.
 - b) Define:
 - i) Magnetic flux
 - ii) DC Motor
 - iii) Magnetic circuit
 - c) Give the classification of DC Generators.
 - d) A transformer has 400 turns on the primary and 100 turns on the secondary, the load draws a current of 40A from the secondary. If primary winding is connected to a 400V, 50 c/s supply, calculate the primary current, secondary voltage and transformation ratio.
 - e) Write a short note on shell type transformer.
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