

ELEMENTS OF ELECTRICAL AND ELECTRONICS ENGINEERING
3rd Exam/Mech./Auto/0193/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. a) Fill in the blanks.

15x1=15

- i. Voltmeter is always connected in ____ with the load.
- ii. Transformer core is made up of _____.
- iii. Fuse is used as a _____ in electrical circuits.
- iv. ELCB stands for _____.
- v. The rating of fuse wire is always expressed in _____.

b) State True or False.

- vi. Ohm's law is applicable to semiconductors.
- vii. In delta connected system, there is no neutral.
- viii. Transformer works on DC.
- ix. CVT stands for Copper Voltage Transformer.
- x. The resistance of earth should be very high.

c) Multiple choice questions.

- xi. The filament of an electric bulb is made of
a) Carbon b) Aluminium c) Tungsten d) Nickel
- xii. The direction of induced EMF in a conductor can be determined by
a) Fleming's right hand rule b) Fleming's left hand rule c) Lenz's law d) Helix rule
- xiii. The induction motor works with
a) DC only b) AC only c) AC and DC both d) None of above
- xiv. Lighting arrestor is located nearer to
a) Transformer b) Isolator c) Busbar d) Circuit breaker
- xv. The material which do not allow to pass current through them
a) Conductor b) Insulator c) Semiconductor d) None of these

SECTION-B

Q2. Attempt any six questions.

6x5=30

- a. Differentiate between a.c. and d.c.
- b. What are the advantages of three phase system over single phase system?
- c. What are different transistor configurations?
- d. Write a short note on pipe earthing.
- e. Write a short note on cartridge type fuse.
- f. Write a short note on zener diode.
- g. Explain the Faraday's laws of electromagnetic induction and Lenz's law.
- h. What is the necessity of cooling of transformers?

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. Explain working principle and VI characteristics of SCR.
- b. Discuss the working principle of a Transformer with diagram.
- c. What is electric shock? Discuss how it can be treated.
- d. Discuss the working principle of three phase induction motor with diagram.
- e. Write a short note on:
i) HRC fuse ii) Stepper motor iii) Synchronous motor