

Code: A-E616123-A

I SEMESTER EXAM – 2025-26

Std.: XII

Sub: ELECTRICAL MAINTENANCE - II

Marks: 40

Date:

Roll No.: _____

Time: 2½ Hrs.

Q.1 Attempt any Four

(4)

- a) An ideal transformer is one which has _____.
 (i) a common core (ii) no losses (iii) windings of pure
- b) The transformation ratio of step down transformer is _____.
 (i) more than one (ii) less than one (iii) one.
- c) Centrifugal switch is connected in _____.
 (i) parallel with running winding, (ii) series with starting winding
 (iii) parallel with starting winding.
- d) At standstill 3 ϕ motor has _____ slip.
 (i) 0% (ii) 5% (iii) 100%
- e) For parallel operation of two 3 ϕ Alternator _____ is used.
 (i) Synchronoscope (ii) multimeter (iii) Insulation
- f) The value of a capacitor used in ceiling fan is _____.
 (i) 2 to 2.5 μ F (ii) 4 to 6 μ F (iii) 6 to 10 μ F

Q.2 Attempt any three

(6)

- (a) What are the advantages of rotating field type of alternator over rotating armature type of alternator.
- (b) A transformer has a voltage ratio of 6600/500V. If the windings having 50 turns is connected to a 500 V supply and takes 10A current, find the turns and current of primary?
- (c) What are the different types of starters of 3-phase induction motor?
- (d) Why a centrifugal switch is necessary in single Split Phase induction motor?
- (e) What type of motor will you select for following devices:
 i) Tablefan ii) Electric drill machines iii) Refrigerator iv) printing machines

Q.3 Attempt any three

(6)

- (a) Why transformers are rated in KVA instead of KW?.
- (b) Define Transformer. On which principle does it works?
- (c) Why single phase motors are not self starting.
- (d) What are the conditions to be satisfied before synchronizing two alternators?
- (e) Define Slip, Find out the speed of induction motor if it has 8 poles and 2% slip, ($f = 50$ Hz)

Q.4 Attempt any two

(6)

- (a) Explain open circuit test of single phase transformer with neat circuit diagram.
- (b) A 3 phase induction motor is wound for 4 poles and supplied from a 50 c/s system. Calculate
 i) Synchronous speed ii) speed of the rotor when slip is 4% iii) rotor frequency
- (c) What are the different methods of speed control of 3 phase induction motor ?

Q.5 Attempt any two

(6)

- (a) Explain the-construction-and-working-of Single Phase Capacitor Run Motor.
- (b) A 30KVA transformer has 500 turns on the primary and 50 turns on the secondary winding. The primary is connected to 3000V 50 Hz ac supply. Calculate
 (i) Primary and secondary currents at Full load and half load.
 (ii) Secondary emf (iii) Maximum flux in the core.

- (c) Compare Power transformer and Distribution transformer.

Q.6 Attempt any two

(12)

- (a) Write down the maintenance schedule of 3-phase power transformer.
- (b) State the advantages of parallel operation of alternators. Name the methods of connecting alternators in parallel. Explain any one method.
- (c) State the necessity of the starter for induction motor. Explain the construction and working of Autotransformer starter with neat circuit diagram.
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