4462

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2021

DEEE - FOURTH SEMESTER EXAMINATION

AC MACHINES - I

Time : 3 hours]   [*Total Marks* : 80

PART—A

4×5=20

Instructions :   (1) Answer *any* **five** questions.

(2) Each question carries **four** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1.   State the function of each part in a Transformer.

2.   Draw the vector diagram of a Transformer working on No Load.

3.   State the need of Parallel Operation of Transformers.

4.   State the effects of Leakage Reactance of primary and secondary windings of Transformer.

5.   List the different types of Three Phase Transformer.

6.   State the necessity of Cooling of Power Transformers.

7.   List the main parts of an Alternator and specify the materials used for those parts.

8.   State the reasons for Voltage Variations occur while loading the Alternator.

9. Define the term 'Synchronous Impedance'.

10. State the conditions for Parallel Operation of Alternators.

PART—B

15×4=60

Instructions : (1) Answer *any* **four** questions.

(2) Each question carries **fifteen** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain the constructional details of Transformer.

12. Derive the EMF equation of a Single Phase Transformer.

13. Develop the vector diagram of a Transformer on Load with Lagging Power Factor.

14. Explain Polarity Test on Single Phase Transformer.

15. Explain ON LOAD Tap Changing in Three Phase Transformers.

16. Explain the working principle of an Alternator.

17. Explain Armature Reaction in Alternator at different Power Factors.

18. Explain the procedure of Synchronization using Synchroscope.

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