

CT Inst. of E

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (EE/EEE) (Sem.-3rd)

TRANSFORMERS & DIRECT CURRENT MACHINES

Subject Code : BTEE-302 (2011 Batch)

Paper ID : [A1135]

Time : 3 Hrs.

Max. Marks : 60

SECTION-B

2. Discuss the operation of single phase transformer
3. Starting from first principle draw the approximate equivalent circuit of single phase transformer.
4. Explain with a neat diagram Sumpner test and direct loading of transformer.
5. Draw and discuss the external characteristics of generators.
6. Discuss how a dc series motor is stopped by plug

SECTION-C

7. (a) Show that an auto transformer is more useful than a two winding transformer for transmission compared to a two winding transformer for transmission to unity.
(b) Discuss in brief the parallel operation of three transformers.
8. (a) What is meant by armature reaction? Explain how the effect of armature reaction on the performance of machines can be determined from no-load magnetization characteristics.
(b) Discuss the Ward Leonard method of speed control of dc motor.
9. Write short notes on **any two** of the following :
(a) Back to back test of transformer
(b) Equivalent circuit of three winding transformer
(c) Hopkinson test of dc motor

SECTION-A**I. Write briefly :**

- a) Why transformers are rated in kVA and not in KW? Justify.
- b) State two characteristics of shell and core type transformers.
- c) What is hysteresis loss? How can it be reduced?
- d) Define all day efficiency of auto transformer and give its importance.
- e) Mention two advantages & two disadvantages of auto transformer.
- f) Define armature reaction & state its effect.
- g) What is back EMF? State its significance.
- h) Define critical field resistance of dc shunt generator.
- i) Why dc series motor is used for traction purpose?
- j) What is the role of starter in dc motor?

