Roll No……..….. **Total No. of Printed Pages: 1**
Total No. of Questions: [09]

B. Tech (Civil Engg.) (Semester – 8th)
BASICS OF TRANSFORMERS
Subject Code: BELE0F95
Paper ID: [OE2110715]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a. What is working principle of transformer?
b. Which test is performed on transformer to find out load losses?
c. State two applications of Autotransformer.
d. Which type of three phase transformer connection is present at generating stations?
e. Why are bushings required in transformer?
f. Which type of insulating material is used for transformer windings?
g. Out of autotransformer and a normal transformer which has better efficiency?
h. What is condition for maximum efficiency of a single phase transformer?
i. Draw a star-delta connection.
j. Which type of material is used for making transformer core?

Section – B **(5 marks each)**

Q2. What is effect of temperature on transformer performance?
Q3. What is Scott connection? Where is it used?
Q4. Explain phase shifting from primary to secondary windings for a three phase transformer.
Q5. How is material saved in making a autotransformer of same capacity as compared to a single phase transformer?
Q6. Why transformers are rated in kVA? Define voltage regulation of transformer.

Section – C **(10 marks each)**

Q7. Draw and explain the phasor diagram of a single phase transformer under
a) no load condition b) Loaded condition (inductive load)
Q8. Compare autotransformer with two winding transformer. Also list advantages and disadvantages of autotransformers.
Q9. How is conversion from three phase to six phase performed for three phase transformers?