Time: (3 Hours) **Total Marks: 80**

N.B: (1) Question No. 1 is compulsory.

(2) Attempt any three from the remaining questions.

(3) Figures to the right indicate full marks.

(4) Each question is of 20 Marks.

Q1. Answer any Four.

a. Explain equivalent circuit of a single phase transformer refer to primary. **5M**

b. Explain need of parallel operation of transformer. Explain necessary condition for parallel operation. **5M** **5M**

c. Explain connection and phasor diagram of Yd11 transformer. **5M**

d. Explain construction detail of auto transformer. **5M**

e. Explain torque-slip characteristic of three-phase induction motor. **5M**

Q2. Answer the following questions.

a. State different types of starter for three phase induction motor. Explain any one with neat diagram. **10M**

b. Explain how to obtain performance of three phase induction motor using circle diagram. **10M**

Q3. Answer the following questions.

a. Explain saving of cu in auto transformer with application. **10M**

b. Explain Scott connection with neat diagram. **10M**

Q4. Answer the following questions.

a. Explain construction and working of 3-phase induction motor with neat diagram. **10M**

b. Describe switching intransient phenomenon in three phase transformer. **10M**

Q5. Answer the following questions.

a. Explain construction, working, characteristic and application of shaded pole induction motor. **10M**

b. Explain power flow stages of 3ph induction motor. **10M**

Q6. Answer the following questions.

a. Explain different method of speed control of 3 phase induction motor. **10M**

b. Explain in detail parallel operation of two single phase transformers. **10M**

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