

S.B. Roll No.....

**ELECTRICAL MACHINES**  
**3<sup>rd</sup>/ECE/ETV/EMP/ECE-II/0617/Nov'15**

**Duration: 3 hrs**

**M.Marks=75**

**SECTION A**

**Fill in the blanks:**

**10×1.5=15**

1. In a 3-phase system, the phase difference between the two adjacent e.m.fs. is.....
2. Transformer core is made of laminations to reduce.....
3. When a conductor cuts the..... an .....is induced in it.
4. When load on a synchronous motor increases its speed.....
5. Wave winding has.....parallel paths.
6. For step up transformer, the transformation ratio is.....than unity.
7. Wattmeter is an instrument, which measure.....
8. A motor in which rotor turns in discrete movement is called a.....
9. To measure large values of voltages in power system.....is used in conjunction with voltmeter.
10. Transformer steps up or steps down.....

**SECTION B**

**Note: Attempt any SIX questions**

**6×5=30**

1. Write down the difference between Current Transformer and Potential Transformer.
2. Write a short note on losses in a transformer.
3. Explain Faraday's Law of Electromagnetic Induction.
4. How can you differentiate a generator and motor action?
5. What is the principle of operation of universal motor?
6. Discuss the characteristics of synchronous motor.
7. Discuss the advantages of auto transformer.
8. What is Lenz's law? Explain.

**SECTION C**

**Note: Attempt any THREE questions**

**10×3=30**

1. Explain the principle, construction and uses of D.C motor.
2. Explain the construction and working of three phase induction motor.
3. Discuss the Delta Star connection of 3 phase transformer.
4. Write a short note on
  - a. Instrument Transformer
  - b. Stepper Motor
  - c. DC motor characteristics
5. Write three methods for control of speed of 3 Phase Induction motor.