

**MASTER OF VOCATION**  
**Robotics and Automation**  
**Subject: Advanced Electrical & Electronics Engineering**  
**Subject Code: EE-801**  
**Semester: First**  
**January 2021**  
**Theory (External): 35 Marks**  
**Time: 03 Hours**

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**Instructions to the Students**

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

**Roll Number**

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**SECTION –A (OBJECTIVE TYPE QUESTIONS)**  
**(10x1=10 Marks)**

- A. Define Synchronous Speed.
- B. State Brushless alternators.
- C. Explain working principle of stepper motor.
- D. Difference between cycloconverter and Chopper.
- E. Draw speed-torque characteristics of three phase induction motor.
- F. Give the merits of Power transistor (any two).
- G. State the applications of IGBT (any two).
- H. Draw the symbol of TRIAC and DIAC.
- I. Give the types of gate triggering.
- J. State bridge Cycloconverter.

**SECTION -B (ESSAY TYPE QUESTIONS)**  
**(5x5=25 Marks)**

1. Describe essential parts and principle operation of Single Phase Induction Motor and also explain its industrial applications.
2. Explain construction and working principle of Universal motor with systematic diagram and also explain its industrial applications.
3. What are the essential features and working of synchronous machine? Also explain its advantages and applications.
4. Discuss Switching characteristics of thyristor during turn-on and turn-off.
5. Explain parallel operation of SCR in details. Give the turn ON methods of SCR (any four).
6. Explain with sketch the working of battery charger and temperature controller using SCR.
7. Describe Steady state time domain analysis of type A-chopper. Also explain voltage commutated chopper in brief.
8. Explains the basic circuit and operation of single phase cycloconverter in details.

**\*\*\*\*\*END OF PAPER\*\*\*\*\***