

11 DEC. 2025 TE ELECTRICAL (SEM-VI) C SCHEME SEM QP CODE: 10095411

- N.B.:-** 1) Question No.1 is compulsory.
2) **Attempt** any **three** questions out of remaining **five** questions.
3) Assume suitable data if necessary and justify the same.

- Q 1. Answer the following questions. 20
- a) Explain briefly about open loop control of stepper motor.
 - b) Describe the open loop control analysis of switched reluctance motor.
 - c) Explain the working principle of PMBLDC motor.
 - d) Derive the expression for torque in synchronous reluctance motor.
- Q 2. a) Describe power converter circuit of stepper motor with neat sketch. 10
- Q 2. b) Summarize the various applications of stepper motor. 10
- Q 3. a) Describe power converters used for the control of switched reluctance motor with neat sketch. 10
- Q 3. b) Explain sensor less control of switched reluctance motor. 10
- Q 4. a) Explain the working principle of PMBLDC and compare conventional DC motor and PMBLDC motor. 10
- Q 4. b) Describe the open loop control scheme of a PMBLDC motor drive. 10
- Q 5. a) Explain the constructional details and working principle of PMSM. 10
- Q 5. b) Illustrate closed loop control analysis of permanent magnet synchronous machine. 10
- Q 6. a) Describe fast torque response control in synchronous reluctance motor. 10
- Q 6. b) Demonstrate the working principle of linear induction motor also give the applications. 10
