

**B.Tech. - VIEP - ELECTRICAL ENGINEERING  
(BTELVI)**

**Term-End Examination**

**00708**

**June, 2018**

**BIEEE-003 : SPECIAL ELECTRICAL MACHINES**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any *five* questions. Use of scientific calculator is allowed.

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1. (a) What is the effect of emf injection in the rotor circuit of a slip ring induction motor ? Describe in detail with phasor diagram. 7
- (b) Explain Static Kramer method of slip power recovery control scheme of three-phase induction motors. 7
2. (a) Draw and explain the equivalent circuit model of a single-phase induction motor. 7
- (b) Explain a single-phase shaded pole type of motor with its characteristics. 7

3. (a) Differentiate servo motors from conventional motors. Give applications of servo motors. 7
- (b) Explain the construction and working of a two-phase servo motor. 7
4. (a) Construct and evaluate the operation of single-stack and multi-stack stepper motor with neat sketches. 7
- (b) Discuss dual voltage driver circuit for two-phase on drive of a four-phase stepper motor and explain the nature of current build-up in dual voltage drive. 7
5. Derive the voltage, current and torque equation of Switched Reluctance Motor (SRM). 14
6. Explain the operation of electronic commutator in Permanent Magnet Brushless Direct Current (PMBLDC) motor with neat diagram. 14
7. (a) Explain the working of single-phase repulsion motor with its speed-torque characteristics. 7
- (b) Discuss the main features and working of single-phase permanent magnet generator. 7
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