

[Time: 3 Hours]

[ Marks:60]

Please check whether you have got the right question paper.

- N.B:**
1. **Question.No.1** is compulsory.
  2. Attempt any **three** questions from remaining **five** questions.
  3. **Figures to right** indicate **full marks**.
  4. Assume suitable **data**, if **any**.

**Q 1**

- (a) Explain the necessity of starter in D.C. Motor **05**
- (b) State the important applications of brushless DC motor **05**
- (c) A 4 pole, 50 Hz induction motor has full load speed of 1440 rpm. Calculate slip. **05**

**Q2**

- (a) Explain construction and working principle of 3 phase squirrel cage induction motor. **08**
- (b) What are the advantages, disadvantages and applications of switched reluctance motor? **07**

**Q3**

- (a) Explain the principle of operation of capacitor start and capacitor run single phase induction motor. **08**
- (b) Describe the construction and working principal of variable reluctance motor. **07**

**Q4**

- (a) State the different types of brushless dc motor and explain any one. **07**
- (b) Explain different speed control methods of DC shunt motor **08**

**Q5**

- (a) Compare the different starting methods of three phase induction motor **07**
- (b) Explain with neat sketches the armature reaction in DC machine **08**

**Q6 Write short notes on any three**

- (a) The double field revolving theory in single phase induction motor **05**
- (b) Permanent magnet synchronous motor. **05**
- (c) Drive circuit of stepper motor **05**
- (d) Control requirement for switched reluctance motor **05**