

**SRI VENKATESWARA COLLEGE OF ENGINEERING AND TECHNOLOGY**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (UG)**

**ASSESSMENT TEST – 1 SCHEDULE (APR/MAY - 2023)**

**DATE: 13.03.2023**

<b>DATE OF EXAM</b>	<b>III- YEAR (VI SEM) REGULATION 2017</b>	<b>IV- YEAR (VI SEM) REGULATION 2017</b>	<b>LAST DATE OF MARK SUBMISSION</b>
14.03.2023	EE8601 – Solid State Drives	EE8015 – Electrical Energy Generation Utilization and Conservation	22.03.2023
15.03.2023	EE8602 – Protection Switch Gear	EE8019 – Smart Grid	22.03.2023
16.03.2023	EE8691 – Embedded Systems	-	22.03.2023
17.03.2023	EE8005 – Special Electrical Machines	-	22.03.2023

*U. R. S.*  
HOD

*M. S. S.*  
#3/3/23  
V.P

*S. S. S.*  
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# SRI VENKATESWARA COLLEGE OF ENGINEERING AND TECHNOLOGY

## Department of Electrical & Electronics Engineering

### ASSESSMENT 1

Year/sem: III/VI

Time: 9AM to 12 PM

Date: 20-03-2023

Sub code / Title: EE8005 / Special Electrical Machines

Max marks: 50

CO1	Ability to acquire the knowledge on construction, operation and control of synchronous reluctance motors.
CO2	Ability to acquire the knowledge on construction, operation and control of stepper motors.

#### PART – A

(7\*2=14)

Answer the all question

1. What is the difference between potential and potential difference? CO2
2. List the applications of synchronous reluctance motors. CO1
3. Examine the principle of operation Synchronous reluctance Motor. CO1
4. Give the voltage and torque equation of synchronous reluctance motor. CO1
5. Justify whether skewing is necessary for synchronous reluctance motor. CO1
6. Define step angle. CO2
7. Define slewing. CO2

#### PART – B

(12\*2=26)

8. a. (i) Give a detailed technical note on the variable reluctance motor and the advantages. (7) CO1  
(ii) Investigate the performance of the synchronous reluctance motor with neat phasor diagram. (6) CO1  
(OR)  
b. (i) Draw and explain the phasor diagram of synchronous reluctance motor. (3) CO1  
(ii) Explain the construction and operation of axial and radial flux machines. Discuss the advantages and disadvantages of each construction. (10) CO1
9. a. Differentiate between axial and radial air gap synchronous reluctance motors. Compare the performance of synchronous reluctance motor with switched reluctance motor. (13) CO2  
(OR)  
b. Describe in detail the construction and working of variable reluctance stepper motor. (13) CO2

#### PART – C

(10\*1=10)

10. a. Explain the various stator current modes in a synchronous reluctance motor in detail CO2  
(Or)  
b. Explain in detail, linear analysis of stepper motor. CO1



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