**R19**

Reg. No:

## SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
### (AUTONOMOUS)
### B.Tech II Year II Semester Regular Examinations July-2021
### ELECTRICAL MACHINES-II
#### (Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

### UNIT-I

| | | | | |
|---|---|---|---|---|
| 1 | a | Explain the principle of operation of Induction motor. | L1 | **6M** |
| | b | A three phase induction motor is wound for 4 poles and is supplied from 50 HZ System. Calculate (i) synchronous speed (ii) speed of the motor when slip is 4% and (iii) Rotor current frequency when the motor runs at 600rpm. | L3 | **6M** |

**OR**

| | | | |
|---|---|---|---|
| 2 | Explain the Torque-Slip and Torque Speed characteristics of a 3-phase Induction motor. | L3 | **12M** |

### UNIT-II

| | | | |
|---|---|---|---|
| 3 | Explain how to predetermine the performance of induction motor from no-load and blocked rotor tests. | L1 | **12M** |

**OR**

| | | | | |
|---|---|---|---|---|
| 4 | a | Briefly explain the working of star delta starter with a neat diagram. | L2 | **6M** |
| | b | Two 50 Hz, 3-Φinduction motor having 8 and 4-poles respectively are cumulatively cascaded. The 6- pole motor being connected to the main supply. Determine frequencies of rotor currents and the slips referred to each stator field. If the set has slip of 5%. | L3 | **6M** |

### UNIT-III

| | | | |
|---|---|---|---|
| 5 | Explain the constructional features of synchronous generator with neat sketches. | L2 | **12M** |

**OR**

| | | | |
|---|---|---|---|
| 6 | Explain the procedural steps to find voltage regulation of synchronous generator by Synchronous Impedance Method. | L2 | **12M** |

### UNIT-IV

| | | | |
|---|---|---|---|
| 7 | Briefly discuss about the starting methods of synchronous motor with suitable diagrams. | L1 | **12M** |

**OR**

| | | | |
|---|---|---|---|
| 8 | Explain the variation of current and power factor with excitation with suitable curves. | L2 | **12M** |

### UNIT-V

| | | | |
|---|---|---|---|
| 9 | Explain the working operation of A.C Series motor? What are the drawbacks? | L1 | **12M** |

**OR**

| | | | |
|---|---|---|---|
| 10 | Explain the working principle of reluctance motor and Draw torque –speed characteristics. | L2 | **12M** |

*** END ***