S. B. Roll. No.....

ELECTRICAL MACHINES-III
6th Exam/Elect/5527/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. Rating of alternators is given in_____
b. Hydro generators are usually of _____Type.
c. A motor in which the rotor turns in discrete movements is called a_____
d. A linear induction motor gives rotational motion. (True/False)
e. What type of rotor is adopted for high speed alternators?
f. When synchronous motor is overexcited, it runs at _____power factor.
g. The brushes of Schrage motor are made of_____
h. What is stepper motor?
i. An alternator is said to be overexcited when it is operating at _____power factor.
j. A synchronous motor draws ____current from the three phase AC supply mains at unity power factor.
k. Voltage regulation of alternator can be _____on leading power factor.
l. Synchronous machines are inherently self starting. (True/False)
m. Salient pole synchronous generator has _____Speed.
n. Servo motors are also called control motors. (True/False)
o. Voltage of an alternator can be changed by varying its_____

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. What are applications of synchronous motors?
ii. What do you understand by i) distribution factor ii) Coil span factor
iii. Give comparisons of servo motors with conventional motors?
iv. Write short note on stepper motor.
v. Why are distributed windings preferred over concentrated windings?
vi. Write down some advantages of short pitched winding.
vii. What are the causes of hunting?
viii. Differentiate between synchronous motor and induction motor?

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. A 3 phase, 4 pole, 24 slot alternator has its armature coils short pitched by one slot. Find;
i) Distribution factor ii) Coil span factor
b. Explain the methods of cooling of electrical machines in details.
c. Show with the help of phasor diagram, the effect of varying field excitation in a synchronous motor on load.
d. Describe with suitable diagram, the construction and working principle of a Schrage motor.
e. What are the advantages of parallel operation of alternators?