

**ANURAG Engineering College**

(An Autonomous Institution)

III B.Tech I Semester Supplementary Examinations, June/July-2024

**ELECTRICAL MACHINES - III****(ELECTRICAL & ELECTRONICS ENGINEERING)****Time: 3 Hours****Max.Marks:75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Compare round rotor and salient pole machines.	CO1	L2	2M
2. Explain coil span and distribution factor?	CO1	L2	3M
3. Explain regulation of 3 phase alternator by synchronous impedance method.	CO2	L2	2M
4. Explain regulation of 3 phase alternator by M.M.F method.	CO2	L2	3M
5. Compare parallel operation and load sharing of a synchronous generator.	CO3	L2	2M
6. Define sub-transient, transient and steady state reactance.	CO3	L1	3M
7. Draw the circle diagram of synchronous motor.	CO4	L1	2M
8. Explain the term Hunting in a synchronous motor.	CO4	L2	3M
9. Write the applications of Stepper motor.	CO5	L1	2M
10. Write the applications of Shaded pole motor.	CO5	L1	3M

**Section B (Essay Questions)****Answer all questions, each question carries equal marks.****(5 x 10M = 50M)**

11. A) Explain with the neat diagram the Constructional Features of round rotor and salient pole synchronous generator.	CO1	L3	10M
<b>OR</b>			
B) Explain with the neat diagram the terms Distributed and concentrated winding's in a 3 phase alternator.	CO1	L3	10M
12. A) Describe the M.M.F. method for determining the voltage regulation of an alternator.	CO2	L3	10M
<b>OR</b>			
B) Describe the Z.P.F. method for determining the voltage regulation of an alternator.	CO2	L3	10M
13. A) Two three phase alternators operate in parallel. The rating of one machine is 25MW and that of other is 50MW. Both are fitted with governors having droop of 2%. How will the machines share a common load of 50MW?	CO3	L2	10M
<b>OR</b>			
B) What do you mean by synchronization of alternator? Describe any one method of synchronizing.	CO3	L3	10M
14. A) Explain different starting methods of synchronous motor.	CO4	L2	10M
<b>OR</b>			
B) Explain the principle of operation of synchronous motor.	CO4	L2	10M
15. A) Explain the principle of operation of Stepperl motor with neat diagram.	CO5	L2	10M
<b>OR</b>			
B) Explain the principle of operation of BLDC motor with neat diagram.	CO5	L2	10M