

ANURAG Engineering College

(An Autonomous Institution)

III B.Tech I Semester Supplementary Examinations, December –2024

ELECTRICAL MACHINES - II**(ELECTRICAL AND 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. List the main parts of three phase Induction Motor?	CO1	L1	2M
2. Define Slip of an Induction Motor?	CO1	L1	3M
3. Name the type of starters used in three phase Induction Motors?	CO2	L1	2M
4. Explain the effect of increasing the rotor resistance on starting current and Torque.	CO2	L2	3M
5. Define the Term Pitch Factor?	CO3	L1	2M
6. Explain Armature Reaction in Alternator?	CO3	L2	3M
7. What do you mean by synchronous reactance?	CO4	L1	2M
8. Summarize the conditions for parallel operation of an Alternator?	CO4	L2	3M
9. List the main parts of Synchronous Motor?	CO5	L1	2M
10. Explain the applications of Synchronous motor?	CO5	L2	3M

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

11. A) Develop the relation between mechanical power output and electrical input power to a three phase Induction motor	CO1	L3	10M
OR			
B) Show that the voltage generated in the rotor circuit of a three phase Induction motor at any slip 'S' is equal to 'S' times the voltage generated at standstill?	CO1	L2	10M
12. A) Build and explain the various regions of Torque-Slip characteristics of three phase Induction Motor?	CO2	L2	10M
OR			
B) A three phase, 50Hz, 4 Pole Induction motor has a slip of 4%, calculate, i) Speed of motor ii) Frequency of the rotor emf.	CO2	L2	10M
13. A) Develop the EMF Equation of an Alternator?	CO3	L3	10M
OR			
B) List the methods of reducing Harmonics in an Alternator generated voltage?	CO3	L2	10M
14. A) Explain the voltage regulation by Synchronous Impedance method of an Alternator?	CO4	L2	10M
OR			
B) Explain the determination of direct and quadrature axis synchronous reactance using slip test	CO4	L2	10M
15. A) What are constant extinction circles and constant power circles of a Synchronous Motor? How are they derived?	CO5	L3	10M
OR			
B) Is the Synchronous motor is self-starting? Explain the starting methods of Synchronous Motor?	CO5	L2	10M