

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026

Fourth Semester

Electrical and Electronics Engineering

UEET24404 – ELECTRICAL MACHINES II

Regulations – 2024

Duration : 3 Hrs

Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BTL	CO	Marks
1.	Infer the role of damper winding in synchronous generator.	L2	1	2
2.	Define voltage regulation.	L1	1	2
3.	Explain the two fundamental characteristics of a rotating magnetic field.	L2	2	2
4.	Interpret the causes of hunting.	L2	2	2
5.	Identify the condition of maximum torque developed in three phase induction motor.	L3	3	2
6.	Draw the torque-slip curve of double-cage induction motor.	L3	3	2
7.	List the advantages of rotor resistance starter-based induction motor starting.	L1	4	2
8.	Name the various methods of speed control employed in three phase cage induction motor.	L1	4	2
9.	Discuss the double revolving field theory.	L2	5	2
10.	State the limitations of shaded pole motors.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a Describe the armature reaction of an alternator with various power factor loads.	L2	1	16
	Or			
	b Illustrate the A.S.A and zero power factor method of determining the regulation of an alternator.	L2	1	16
12.	a Sketch the simplified equivalent circuit of synchronous motor and extend the effect of loading in synchronous motor at various power factor with help of phasor diagrams.	L3	2	16
	Or			
	b A 6600V, 3 phase star connected synchronous motor draws a full load current of 80A at 0.8 PF leading. The armature resistance is 2.2. ohm and reactance of 22 ohm per phase. If the stray losses of machine are 3200W. Find (i) EMF induced (ii) Output power (iii) Efficiency of machine	L3	2	16

13.	a	Sketch and explain the torque slip characteristics of 3 phase cage and slip ring induction motor and show the stable region.	L3	3	16
		Or			
	b	A 100 KW, 330V, 50HZ, 3 phase, star connected induction motor has a synchronous speed of 500 RPM. The full load slip is 1.8 % and full load power factor is 0.85. Stator copper loss is 2440W, iron loss is 3500W and rotational losses are 2200W. Calculate (i) Rotor copper loss (ii) The line current (iii) Full load efficiency	L3	3	16
14.	a	Analyze the speed control schemes of AC machines which are used in steel industry or mines.	L4	4	16
		Or			
	b	Analyze the static Scherbius system of slip power recovery scheme with neat sketch. Also state the merits of Scherbius system over Kramer system.	L4	4	16
15.	a	i Interpret the double field revolving theory of single-phase induction motor.	L2	5	8
		ii Explain the construction and operational details of split phase induction motor.	L2	5	8
		Or			
	b	i Demonstrate the construction and working principle of a Capacitor start induction motor.	L2	5	8
		ii Explain the construction and working principle of a Shaded pole induction motor.	L2	5	8