

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Third Semester**Power Systems Engineering***PPSE2416- Industrial Power System Analysis and Design***Regulations - 2024**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Why is system data necessary before carrying out motor starting analysis?	L1	1	2
2.	Summarize the role of computer-aided analysis in motor starting studies.	L2	1	2
3.	Define acceptance criteria in power factor correction.	L1	2	2
4.	What is meant by sustained overvoltage?	L1	2	2
5.	Tell me the importance of harmonic analysis.	L1	3	2
6.	List the effects of harmonics on power system equipment.	L1	3	2
7.	Illustrate how arc furnace loads cause flicker.	L2	4	2
8.	State the effects of flicker on consumers.	L1	4	2
9.	Mention the importance of computer-aided analysis in ground grid design.	L1	5	2
10.	Discuss various techniques for improving the effectiveness of ground grids.	L2	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Apply suitable starting methods for induction motors and illustrate their performance with neat diagrams.	L3	1	10
	ii Calculate the voltage drop during motor starting for a given system and discuss its impact on system performance.	L3	1	6
	Or			
	b Organize with examples how system data is used in motor starting studies for accurate analysis.	L3	1	16
12.	a Explain acceptance criteria and frequency scan analysis with suitable examples?	L2	2	16
	Or			
	b Explain the effects of back-to-back capacitor bank switching.	L2	2	16
13.	a Evaluate the contribution of industrial loads and power electronic converters as harmonic sources.	L4	3	16
	Or			
	b Examine the working and importance of harmonic filters with neat sketches.	L4	3	16

14.	a	i	Discuss the role of arc furnace loads in flicker generation with suitable illustrations.	L5	4	10
		ii	Describe long-term flicker measurements with examples.	L5	4	6
			Or			
	b		Construct the impact of voltage flicker in a power system and justify the effectiveness of different measurement and mitigation techniques.	L5	4	16
15.	a		With neat diagrams, explain the design and calculation steps involved in ground grid analysis.	L6	5	16
			Or			
	b		Propose and design innovative methods to improve the performance of grounding grids for modern substations. Support your design with suitable examples, diagrams and justifications.	L6	5	16