

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025***Sixth Semester**Artificial Intelligent and Data science***OIE351- Introduction to Industrial Engineering****(Common to Computer Science and Engineering & Information Technology)***Regulations - 2021***Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	Mention two major contributions of Frederick Taylor to Industrial Engineering.	L1	1	2
2.	What is the role of an Industrial Engineer in a manufacturing setup?	L1	1	2
3.	Differentiate between product layout and process layout.	L2	2	2
4.	Write a short note on line balancing.	L1	2	2
5.	Differentiate between Work Sampling and Time Study.	L2	3	2
6.	Explain the role of ergonomics in workplace design.	L2	3	2
7.	When would you use an $\bar{X}$ and S chart instead of an $\bar{X}$ and R chart?	L1	4	2
8.	Differentiate between a single sampling plan and a double sampling plan?	L2	4	2
9.	Outline the two characteristics of batch production.	L2	5	2
10.	Mention two tools used for progress control.	L1	5	2

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

Q.No	Questions	BLT	CO	Marks
11.	a i Interpret any five key applications of Industrial Engineering in industries.	L2	1	8
	i Explain the various roles and responsibilities of an Industrial Engineer.	L2	1	8
	Or			
	b i Illustrate the major factors influencing productivity in an organization?	L2	1	8
	i Compare and contrast Production Management with Industrial Engineering.	L2	1	8
12.	a i Explain any five factors that affect plant location with suitable examples.	L2	2	8
	i Describe the course objectives of studying plant layout in industrial engineering.	L2	2	8
	Or			
	b i Summarises the procedure for designing a plant layout.	L2	2	8

	i	Illustrate the importance of considering storage space requirements during facility layout.	L2	2	8
13.	a	Construct the detailed procedure of Method Study with neat flowchart.	L2	3	16
		Or			
	b	Interpret the design procedure using anthropometry for a seated workstation.	L2	3	16
14.	a	Compare and contrast the concepts and applications of control charts for variables vs control charts for attributes with relevant examples from industry.	L3	4	16
		Or			
	b	Design a double sampling plan for a lot size of 1000 units, with a consumer's risk of 10% at a 5% defect rate and producer's risk of 5% at 1% defect rate. Explain your design and show how it improves over a single sampling plan.	L3	4	16
15.	a	Classify the various types of forecasting techniques with suitable examples.	L3	5	16
		Or			
	b	A company needs to produce 10,000 units of a product annually. The setup cost is ₹500 per batch and the carrying cost per unit per annum is ₹2. Calculate the Economic Batch Quantity (EBQ). Also, discuss how changing the carrying cost would affect the EBQ.	L3	5	16