

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC2025***Fifth Semester**Mechanical Engineering***CME346 - Digital Manufacturing and IOT***Regulations - 2021**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.	Define digital manufacturing.	L1	1	2
2.	Describe the advantages of integrating IoT in manufacturing systems.	L2	1	2
3.	State any two advantages of virtual prototype development.	L1	2	2
4.	Explain the main features of a digital supply chain.	L2	2	2
5.	Define Industry 4.0.	L1	3	2
6.	Explain the role of sensors in smart factories.	L2	3	2
7.	Define Internet of Things.	L1	4	2
8.	Describe the importance of cloud computing.	L2	4	2
9.	What are the main benefits of using digital twins?	L1	5	2
10.	Explain the term digital thread.	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 Describe in detail about the need and importance of digital manufacturing in modern industry.	L3	1	16
	Or			
	b Explain the role of product lifecycle management in integrating design and production.	L3	1	16
12.	a Discuss the process and importance of collaborative product development in digital manufacturing.	L4	2	16
	Or			
	b Discuss the structure and components of a digital supply chain.	L4	2	16
13.	a Explain in detail about the various levels of smart factories with suitable examples.	L2	3	16
	Or			
	b Describe the key technologies used in smart factories and their functions.	L2	3	16

14.	a	What examples can you find to show the real-world application of Industrial Internet of Things in smart factories?	L4	4	16
		Or			
	b	What strategy would you use to integrate machine to machine communication with existing PLC systems?	L4	4	16
15.	a	Discuss in detail about the implementation process of digital twin in a manufacturing system.	L4	5	16
		Or			
	b	Analyze the benefits, challenges, and impacts of digital twin technology in industries.	L4	5	16