

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***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.	List the aspects of digital manufacturing.	L1	1	2
2.	State the benefits of Digital Manufacturing.	L1	1	2
3.	What is the purpose of Engineering Vaulting in product development?	L2	2	2
4.	Define Digital Mock-Up (DMU) in the context of prototype development.	L1	2	2
5.	List any two technologies used in a Smart Factory.	L1	3	2
6.	Comment on the role of IoT in smart factories.	L2	3	2
7.	Distinguish between IoT and IIoT.	L2	4	2
8.	Define cyber physical systems in the context of Industry 4.0.	L1	4	2
9.	Differentiate between a digital thread and digital shadow.	L2	5	2
10.	Mention any two characteristics of a good digital twin platform.	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 Explain the key aspects of Digital Manufacturing with reference to the Product Life Cycle.	L2	1	16
	Or			
	b Explain the evolution of Digital Manufacturing from its origins to current state.	L2	1	16
12.	a Explain the key elements of Collaborative Product Development.	L2	2	16
	Or			
	b Explain the concept and significance of the Digital Supply Chain (DSC).	L2	2	16
13.	a Analysis the various technologies are contribute to the functioning of a Smart Factory.	L4	3	16
	Or			
	b Examine the key cyber security challenges faced by Smart Factories.	L4	3	16
14.	a Elaborate on the architecture and components of the IIoT framework.	L5	4	16
	Or			
	b Discuss how machine to machine communication can be integrated with human-machine interface.	L5	4	16

15.	a	Evaluate the benefits, impact and challenges of implementing Digital Twin.	L4	5	16
		Or			
	b	Describe the characteristics of a good digital twin platform.	L4	5	16