

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Fifth Semester**Biomedical Engineering***BM3551 - Embedded Systems and IoMT***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 embedded processor and give one example.	L1	1	2
2.	Differentiate between CISC and RISC architectures.	L2	1	2
3.	What is the function of a Watchdog Timer?	L1	2	2
4.	Compare SPI and I2C protocols.	L2	2	2
5.	List the importance of state diagrams in embedded software design.	L1	3	2
6.	What is the role of Chip Support Library in embedded development?	L1	3	2
7.	List any two building blocks of IoT.	L1	4	2
8.	Write the need of cybersecurity in IoT.	L2	4	2
9.	What is meant by IoMT? Give an example.	L1	5	2
10.	State the role of mobile and cloud environments in healthcare apps.	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 the challenges in embedded system design and propose possible solutions.	L2	1	16
	Or			
	b Discuss in detail about the differences between Harvard and Von Neumann architectures with respect to performance.	L2	1	16
12.	a Explain the memory interfacing techniques with a suitable case study.	L2	2	16
	Or			
	b Compare the advantages and limitations of USB, CAN, and Ethernet protocols.	L2	2	16
13.	a i Explain the role of model-based system engineering (MBSE) in embedded software development.	L2	3	8
	ii Justify the impact of MBSE on system performance.	L2	3	8
	Or			
	b Create a flowchart for debugging an embedded C program to optimize execution time and energy and explain in detail.	L2	3	16

14.	a	Explain the system building blocks of IoT with neat diagram	L2	4	16
		Or			
	b i	Propose a secure IoT communication framework.	L2	4	8
	ii	Suggest and explain two methods to minimize vulnerabilities.	L2	4	8
15.	a	Explain the efficiency of AdaBoost with feature selection for cancer mutation detection.	L2	5	16
		Or			
	b	Discuss about a novel IoMT system model for real-time Alzheimer's disease monitoring.	L2	5	16