

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024***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>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Compare and contrast CISC and RISC architectures.	UN	1	2
2.	Recall the need of bus protocols in embedded systems.	RE	1	2
3.	Show the use of watchdog timer in embedded system.	UN	2	2
4.	Define interrupt service routine.	RE	2	2
5.	Relate the role of linker in software development process.	RE	3	2
6.	Show how state diagrams assist in embedded system design.	RE	3	2
7.	Mention any four benefits of internet of medical things.	RE	4	2
8.	List the main building blocks of IoT systems.	RE	4	2
9.	Tell the purpose of the novel symmetrical uncertainty measure technique.	RE	5	2
10.	What is the purpose of Adaboost algorithm in cancer diagnosis.	RE	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Analyze the steps involved in the embedded system design process by providing examples wherever applicable.	AN	1	13
	Or			
	b Examine the characteristics of different memory devices used in embedded systems.	AN	1	13
12.	a Categorize the different types of serial communication protocols and infer each of them based on their key features.	AN	2	13
	Or			
	b Examine the role of timers and counters in real time embedded system applications.	AN	2	13
13.	a Explain the various tools of integrated development environment used for embedded software development.	UN	3	13
	Or			
	b Illustrate in detail about the use of sequence diagrams in embedded system design with a relevant example.	UN	3	13

14.	a	Explain the physical design of an IoT system, focusing on sensor node design and interfacing with embedded target boards.	UN	4	13
		Or			
	b	Summarize the cyber security challenges in IoT systems and also explain about the encryption technologies to address those challenges.	UN	4	13
15.	a	Examine the role of cyber-physical systems in healthcare monitoring system using a specific example.	AN	5	13
		Or			
	b	Analyze the architecture of a fuzzy-based expert system for diagnosing Alzheimer's disease.	AN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Compare different methods of A/D conversion and analyze their impact on system performance with relevant examples.	AN	2	15
		Or			
	b	Examine how an interrupt-based system improves the efficiency of an embedded device compared to polling mechanisms and also discuss the design of an interrupt service routine using a relevant application.	AN	2	15