Code No.: EC722OE | R20 | H.T.No. | | | 8 | R | | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Regular) - November- 2023
INTRODUCTION TO EMBEDDED SYSTEMS
(Common for CSC, CSM, IT)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(20 Marks)**

1.	a)	Mention the applications of embedded system?	[2M]
	b)	Differentiate between microprocessor and microcontroller?	[2M]
	c)	Mention about SPI communication interfaces in embedded system.	[2M]
	d)	Discuss about I2C in detail.	[2M]
	e)	What is the purpose of crystal oscillator in embedded systems?	[2M]
	f)	Explain the role of real time clock in embedded system.	[2M]
	g)	How does a task differ from a thread?	[2M]
	h)	Explain about TCB in operating system,	[2M]
	i)	Explain the firmware embedding process for Os based ES	[2M]
	j)	What is ISP in system programming?	[2M]

PART-B **(50 Marks)**

2.		Define an Embedded System? Explain the characteristics of Embedded Systems.	[10M]
		OR	
3.		Discuss in detail about recent trends in embedded systems.	[10M]
4.		What are the different types of memories used in embedded systems design? Explain the role of each?	[10M]
		OR	
5.		What is actuator? Explain its role in embedded system design? Illustrate with an example?	[10M]
6.		Explain about	
	a)	Reset Circuit with help of neat diagram	[5M]
	b)	Importance of Brown-out protection circuit in embedded systems.	[5M]
		OR	
7.		Explain the various steps involved in the assembling of an assembly language program?	[10M]
8.		What is meant by tasks and show the various states present in the tasking process?	[10M]
		OR	
9.		Explain the concept of goals and various services of OS in detail	[10M]
10.		Give a detailed note on integration of hardware and firmware	[10M]
		OR	
11.		List and explain various methods in debugging.	[10M]

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