Q.P. Code : 27841

[Time: 3 Hours] **[Marks: 80]**

Please check whether you have got the right question paper.

N.B: **1. Q.1 is compulsory.**
2. Attempt any THREE questions from the remaining.

Q.1	a)	Explain the need of RTOS in Embedded System.	**05**
	b)	Explain Thumb Mode of ARM.	**05**
	c)	Explain the design metrics of an embedded system.	**05**
	d)	Explain the programming model for Multi-core Architecture.	**05**
Q.2	a)	Explain register model of ARM with suitable diagram.	**10**
	b)	Explain various addressing modes of ARM with suitable example.	**10**
Q.3	a)	Explain the importance of communication security in an embedded system. Give an example.	**10**
	b)	Discuss Cortex-M3 architectural features. Highlight the programming model for the same.	**10**
Q.4	a)	What is priority inversion? Explain with suitable example.	**10**
	b)	Explain Inter-Process Communication in detail.	**10**
Q.5	a)	Suggest a scheme for designing an embedded system for an autonomous robot used for military rescue operations. Highlight the key protocols preferred for communication and justify the same.	**10**
	b)	How interrupts are handled by RTOS.	**10**
Q.6		Write short notes	**20**
	a)	IoT supported hardware platforms.	
	b)	Types of memory devices used in embedded system.	
	c)	Deadlock and remedy for it.	
	d)	Hard time and Soft time embedded systems.	