(3 Hours) **[Total Marks: 80]**

N.B.: (1) Question No. 1 is **Compulsory**.
(2) Attempt any **three** questions out of the remaining **five**.
(3) Each question carries 20 marks and sub-question carry equal marks.
(4) Assume suitable data if required.

1.	(a)	Draw a DFG for calculating average Temperature of a room with 4 Sensor nodes.	**(5)**
	(b)	What are the different Low Power modes in Cortex-M3 processor, explain any 1 in detail.	**(5)**
	(c)	Draw waterfall model and explain features.	**(5)**
	(d)	Discuss the criteria to choose RTOS in Embedded system?	**(5)**
2.	(a)	Compare White-Box and Black-Box testing, mention typical application areas.	**(10)**
	(b)	Draw FSM for Elevator System for a building with 4 floors. Each floor has a call button outside & elevator cabin has 5 buttons (G,1,2,3 ,4) , Explain model.	**(10)**
3.	(a)	Explain Inter-process Communication in detail.	**(10)**
	(b)	Differentiate between RTOS and GPOS.	**(10)**
4.	(a)	Mention features of RISC and CISC cores. Which of them is used in the embedded systems? Why?	**(10)**
	(b)	Draw an architecture of the ARM Cortex-M3 and discuss important features	**(10)**
5	(a)	Mention all Design metrics of Embedded system , which are the most tightly constrained Metrics.	**(10)**
	(b)	Discuss various types of memories required in the embedded system.	**(10)**
6.	(a)	Differentiate between Hard & soft real time systems with examples.	**(10)**
	(b)	Write short note i) RS-232 ii) Bluetooth	**(10)**

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