Time: 3 Hours **Total Marks: 80**

N.B.:- (1) Question No. **1** is **Compulsory**.
(2) Solve any **three** questions from the remaining **five** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Assume **suitable** data where **necessary.**

1.	(a)	Explain application of Embedded System.	**5**
	(b)	Explain SOC in detail.	**5**
	(c)	Compare AJMP, SJMP, LJMP instructions of 8051	**5**
	(d)	Describe the feature of ARM 7 processor.	**5**
2.	(a)	Explain in details ARM7 pipelining.	**10**
	(b)	Explain the Timer/Counter modes of 8051 microcontroller.	**10**
3.	(a)	Explain addressing modes of ARM 7 processor.	**10**
	(b)	Explain various serial modes of 8051 microcontroller.	**10**
4.	(a)	What is Semaphore? Explain the use of semaphore with respect to embedded systems?	**10**
	(b)	Write an assembly language program for 8051 microcontroller to arrange block of ten numbers in ascending order.	**10**
5.	(a)	Explain priority inversion problem in Embedded Systems. How does it resolved?	**10**
	(b)	Explain the architecture of 8051 microcontroller.	**10**
6.		Write notes on (a) Digital Camera System. (b) Automated meter reading system.	**20**
