

Date - 21/11/19

(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**.

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| 1. (a) | Describe the feature of ARM 7 processor | 5 |
| (b) | Explain SOC in detail. | 5 |
| (c) | Explain application areas of Embedded System. | 5 |
| (d) | Compare AJMP, SJMP, LJMP instructions of 8051 | 5 |
| 2. (a) | Explain addressing modes of ARM 7 processor with suitable example instructions. | 10 |
| (b) | Explain various operating modes of the serial I/O port of 8051 microcontroller. | 10 |
| 3. (a) | Explain in details ARM7 pipelining. | 10 |
| (b) | Explain the auto reload mode of timer/counter of 8051 microcontroller. | 10 |
| 4. (a) | Explain priority inversion problem in Embedded Systems. How does it resolved? | 10 |
| (b) | Draw and explain the architecture of 8051 microcontroller. | 10 |
| 5. (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 |
| 6. | Write notes on | 20 |
| (a) | Digital Camera System. | |
| (b) | Automated meter reading system. | |
