

(3 Hours)

Total Marks: 80

N.B.: (1) Question No.1 is compulsory.

(2) Attempt any three questions from the remaining five questions.

(3) Make suitable assumptions wherever necessary but justify your assumptions.

Q.1 Solve any Four out of Six

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| (a) What are the design metrics of an embedded systems. | 5 |
| (b) Explain SCON register of 8051. | 5 |
| (c) Give difference between general purpose OS & RTOS. | 5 |
| (d) Draw & explain interfacing of ADC to 8051. | 5 |
| (e) What is Arduino? What are its components? | 5 |
| (f) Explain CPSR Register of ARM7 | 5 |
| Q.2 (a) Discuss the various operating modes of ARM7 processor. | 10 |
| (b) Draw & explain architecture of 8051 in detail. | 10 |
| Q.3 (a) Draw & Explain interfacing of 8255 to 8051. | 10 |
| (b) List and explain how exceptions and interrupts handled in ARM7 | 10 |
| Q.4 (a) Draw & explain internal RAM structure of 8051 in detail. | 10 |
| (b) List & explain different cores of an Embedded System. | 10 |
| Q.5 (a) Write short note on Inter-process communication. | 10 |
| (b) Draw & explain interrupt structure of 8051 in detail | 10 |
| Q.6 Write a short note on (Any Two) | 20 |
| (a) Pipelining of ARM 7 processor | |
| (b) 8051 register banks | |
| (c) Real Time OS | |
