

Duration Three Hours

Total marks 80

- N.B.**
- [i] **Question No 1 is compulsory and attempts any three out of remaining five questions.**
 - [ii] **Assume suitable data wherever required.**
 - [iii] **Figures to the right indicate full marks.**

1. Solve any four

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| (a) Differentiate between RISC & CISC Architecture. | 5 |
| (b) What is difference between Primary memory and Secondary memory | 5 |
| (c) What will be the status of CY, AC, OV and P flag after F2H + 4BH operation is carried out in the ALU of the 8051 microcontroller? | 5 |
| (d) Explain the need of Watch Dog Timer and Brown Out Detection feature used in the microcontrollers | 5 |
| (e) Explain following ARM7 instructions | 5 |
| ➤ ADD R0,R2,R3,LSL#1 | |
| ➤ CMP R0,R1,LSR#7 | |
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| 2. (a) With the help of diagram, list the sequence of operation carried out by the microprocessor after RESET to execute a program stored in a memory. Assume suitable RESET vector address. | 10 |
| (b) Explain concept of Virtual Memory with Memory Management Unit. | 10 |
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| 3. (a) Explain Interrupt structure of 8051 microcontroller. | 10 |
| (b) Describe the features of ARM processor. Also explain Which features are accepted and which are rejected from basic RISC machine. | 10 |
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| 4. (a) Write assembly language program for 8051 to transfer message “MAY 2023” serially at baud rate of 9600 in mode1. Assume that 8051 operate at frequency 11.0592 MHz | 10 |
| (b) Explain difference between Timer & Counter of 8051. Explain all timer modes. | 10 |
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| 5. (a) What is significance of CPSR register of ARM? Draw and explain each bit position | 10 |
| (b) Write assembly language program for 8051 for blinking all 8 LEDs connected to port 1. Select proper delay so that the blinking is clearly seen. Assume 8051 is operating on 12Mhz. Use Delay Subroutine for generating suitable delay. | 10 |
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| 6. (a) What are the factors that are required to be considered for selecting a microcontroller for an application? | 10 |
| (b) What do you mean by Assembler directives, Why Assembler directives are called as Pseudo instructions? Explain few of them with examples. | 10 |

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