Extc/V/Rev

17/5/16

MA.

QP Code : 31103

(3 Hours) [Total Marks : 80]

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

(2) Solve any three questions out of remaining questions.

(3) Figures to the right indicate full marks.

(4) Assume suitable data where necessary.

1. (a) Explain Concept of Cortex-A, the Cortex-R, and the Cortex-M . 5

(b) Compare AJMP, SJMP and LJMP instructions of 8051 5

(c) What is Stack ? How it is implemented in 8051? 5

(d) Which are the basic features adopted from RISC architecture to enhance the performance of ARM architecture? Explain in short two of them . 5

2. (a) Explain exceptions and interrupt handling in ARM 7 . 10

(b) Explain PORT 1 structure of 8051. 10

3. (a) Write an Assembly language program for 8051 to copy a block of data 10 bytes long from RAM locations starting at 35H to RAM locations starting at 60H. 10

(b) Interface HEX keypad and seven segment display to 8051 and write assembly language program to display the key pressed on the display. 10

4. (a) Write a assembly language program to generate a rectangular waveform of frequency 1 KHz and 70% duty cycle at pin P1.1 using 8051. Assume 8051 is operating at frequency 12 MHz. 10

(b) What is pipeline concept of ARM 7 architecture, explains it with proper block diagram. How it affects the system performance? 10

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5. (a) What are the challenges in optimizing embedded system design matrices ? 5

(b) Explain IR based wireless communication system design. 5

(c) Explain addressing modes of ARM 7. 10

6. (a) Explain interrupt structure of 8051 10

(b) Write assembly language program for 8051 to transfer message "WELCOME" serially at baud rate of 9600 in mode 1. Assume that 8051 operates at frequency 11.0592 MHz. 10