

325734(25)

**B. E. (Seventh Semester) Examination,
April-May 2018-19**

(New Scheme)

(EEE Branch)

MICROCONTROLLERS and APPLICATIONS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : All questions are compulsory. Part (a) of each questions is compulsory. Attempt any two parts from (b), (c) and (d).

Unit-I

- 1. (a) How much time require to erase the Microcontroller 8751? 2

325734(25)

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- (b) Distinguish 8751, 8051, 8031 and 8052 in terms of memories, times and interrupts. 7
- (c) Write all versions of 8051 Atmel and distinguish in terms of ROM, RAM, I/O, pins, speed, timer, interrupts, d.c. power supply to drive IC and packaging. 7
- (d) Draw and explain pin configuration of Microcontroller 8052. 7

Unit-II

- 2. (a) What should be the duration of Reset Signal? 2
- (b) Assuming that ROM space starting at 250 H contains. "America", write a program to transfer the bytes into RAM location starting at 40 H. 7
- (c) The cost prices of IO items are stored in RAM locations starting from 50 H onwards. When these items are sold out as indicated by a 'high' on a switch the cost price B replaced by the selling price by adding a constant profit of 19 to each value. This changed data is sent out through port I with a delay between each data transfer. Write a program for this scenario. 7

325734(25)

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[3]

(d) When is the OV flag set?

Perform the following addition of signed numbers and find out the status of OV bit of PSW for each : 7

- (i) - 128 & -2 http://www.csvtuonline.com
- (ii) + 66 & + 69
- (iii) - 30 & + 14
- (iv) + 12 & + 18
- (v) - 126 & - 127

Unit-III

- 3. (a) Explain role of Gate bit in TMOD Register. 2
- (b) Explain following terms :
 - (i) Working difference of RET & RETI
 - (ii) Edge & Level trigger Interrupts
 - (iii) IEO & ITO bits of TCON
 - (iv) Vector addresses of external Interrupt 0 & 1 7
- (c) Two switches are connected to pin P3-2 and P 3-3. When a switch is pressed, the corresponding line goes 10 W. Write a program to
 - (i) Light all LEDs connected to port 0, if the first switch is pressed

325734(25)

PTO

[4]

(ii) Light all LEDs connected to port 2, if the second switch is pressed. 7

(d) Design a counter for counting the pulses of an input signal. The pulses to be counted are fed to pin P 3-4 . XTAL = 22 MHz. 7

Unit-IV

- 4. (a) What is the Role of TI and RI bit in SCON Register? 2
- (b) Write a program to receive the data which has been sent in serial form and send it out to ports in parallel form. Also save the data at RAM location 60 H. 7
- (c) Explain GPIB in detail. 7
- (d) Explain 25 pin D-type connector of RS-232. 7

Unit-V

- 5. (a) How 4 x 4 matrix keyboard connected to ports of 8051? 2
- (b) Draw interfacing of 8 K x 8 Data ROM and 8 K x 8 program ROM with 8051. 7
- (c) Explain concepts of Embedded design. 7

325734(25)

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(d) A switch is connected to pin P 2-7. Write a program to monitor the status of SW and perform the following : 7

(i) If SW = 0 the stepper motor moves clockwise

(ii) If SW = 1 the stepper motor moves counter clock wise. 7

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