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APR-MAY

B. E. (Seventh Semester) Examination, 2020

(Old Scheme)

(EEE, Et & T Engg. Branch)

MICRO CONTROLLER & EMBEDDED SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

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

Unit-I

1. (a) Explain advantages of Romless microcontroller. 2
- (b) Draw and explain block diagram of 8051micro controller. 7

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- (c) Explain the function of following pins of 8051 micro controller : 7
- (i) \overline{PSEN}
 - (ii) $\overline{INT0}$
 - (iii) XTAL1
 - (iv) RST
 - (v) \overline{EA}/VPP
 - (vi) TO
 - (vii) $\overline{ALE}/\overline{PROG}$
- (d) Compare 8031, 8052, 8751 and AT89C51 microcontrollers. 7

Unit-II

2. (a) Differentiate between XCH and XCHD. 2
- (b) Explain stack organization of 8051 microcontroller. 7
- (c) Describe various addressing modes with suitable example of 8051. 7
- (d) Write a program to transfer the contents of register A, R_0 and R_1 , respectively, of bank 0 to the

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[3]

- registers B , R_0 and R_1 of bank 1 using stack operation. 7

Unit-III

3. (a) What is the significance of TF_x bit in TCON register. 2
- (b) Explain following registers : (any two) 7
- (i) TMOD
 - (ii) IE
 - (iii) TCON
 - (iv) IP
- (c) Write a program for Timer 0 to create a pulse width of 5 ms on P2.3. Assume that XTAL = 11.0592 MHz. 7
- (d) Explain mode 2 operation of timers of 8051 micro controller. Also write the steps to program time in mode 2. 7

Unit-IV

4. (a) Differentiate between synchronous and asynchronous serial communication. 2

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PTO

- (b) Explain RS-232 and RS-422 standards. 7
- (c) Explain GPIB and Max 232 drivers. 7
- (d) Explain SBUF and SCON register of 8051 micro controller. 7

Unit-V

5. (a) Explain the development process of the embedded system. 2
- (b) Draw and explain the architecture of 8096 micro-controller. 7
- (c) Draw the interfacing diagram of ADC0804 with 8051 microcontroller. 7
- (d) Interface 8k×8 RAM memory with 8051 micro-controller. 7