

00771

**B.Tech. IN ELECTRICAL ENGINEERING
(BTELVI)**

**Term-End Examination
December, 2012**

BIEE-010 : MICRO CONTROLLERS

Time : 3 hours

Maximum Marks : 70

*Note : (i) Attempt **any seven** questions.*

(ii) Assume suitable data if missing any.

1. (a) What are the basic differences between RISC and CISC CPU structures. 5
- (b) How external memory is interfaced with 8051/31 microcontroller. Explain with an example. 5
2. (a) What do you understand by interrupt priority? How can we change the priority of an interrupt? 5
- (b) What are the different criteria to choose a microcontroller ? Discuss in detail. 5
3. (a) Describe the function of following instruction of 8051. 4
- (i) ANL C, b
- (ii) ORL A,@RP

- (b) Write an 8051C prog. to get a byte of data from P1, wait 1/2 seconds & then send it to P2. 6
4. (a) What is the function of stack in 8051? Write an 8051 program to swap the contents of register R7 & R6 in register bank 0. 5
- (b) Describe the various modes of 8051 timer ? 5
5. (a) Write a program to generate a square wave of 5KHz. Frequency at Pin P1.3. Assume $X_{TAL} = 22\text{MHZ}$. (crystal frequency) . 5
- (b) What is the necessity for providing 4 banks of general purpose register R_0 to R_7 in 8051 ? How can you switch over to bank of 1 from bank 0 ? 5
6. (a) Give the alternate function of port 3 pins of 8051 microcontroller. 5
- (b) How do you distinguish between 8 bit & 16 bit microcontroller? Give an example of 8, 16, 32 bit microcontroller. 5
7. (a) Explain the function of each bit in PSW register. 5
- (b) What is the advantage of bit addressability feature in 8051? Name two registers which are not bit addressable. 5

8. (a) Explain the function of following instructions: **6**
(i) PUSH OEH
(ii) ADD A, @RO
(iii) ORL A, @ RP
- (b) State the function of each bit in TMOD register. **4**
9. (a) Design a counter for counting the pulses of an I/P signal. The pulses to be counted are fed to Pin P3.4. $X_{TAL} = 22\text{MHZ}$. (crystal frequency) **7**
- (b) What are the basic features of 8051 microcontroller ? **3**
10. Write short notes on *any two* of the following : **2x5=10**
(a) Interfacing 8051 to stepper motor
(b) Interrupts in 8051
(c) Interfacing 8051 to DAC
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