

**B.Tech. – VIEP – ELECTRONICS AND  
COMMUNICATION ENGINEERING  
(BTECVI)**

**Term-End Examination**

00604

**June, 2017**

**BIEL-008 : MICROCONTROLLERS**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Attempt any **seven** questions. All questions carry equal marks. Missing data may be suitably assumed.

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1. (a) Explain RISC and CISC architectures. 5
- (b) Describe Von Neumann and Harvard architectures. 5
2. Explain the following instructions : 5×2=10
  - (a) XCHD A, @RO
  - (b) MOVC A, @A+DPTR
  - (c) SUBB A, #55H
  - (d) DA A
  - (e) JBC bit, rel

3. (a) Write a program to add 5 numbers which are stored between internal RAM 60H to 64H. Store the result in R6 and R7. 5
- (b) What are the different types of interrupts in 8051 ? Specify the vector location of interrupts in 8051. 5
4. Explain the block diagram of 8051 and its features. 10
5. Explain briefly five addressing modes of 8051 with an example. 10
6. (a) Briefly explain about stack and its instructions used in 8051. 5
- (b) Discuss ORG, END, DB and EQU directives. 5
7. Write a delay program to generate a delay of 10 ms. Assume a crystal of 11.0592 MHz. Show the delay calculation clearly. 10
8. Explain the function of the following pins of 8051 : 5×2=10
- (a)  $\overline{EA}$
- (b) ALE
- (c)  $\overline{PSEN}$
- (d) RST
- (e)  $\overline{RD}$

9. Explain TMOD and TCON registers with their patterns. 10
10. Write short notes on any *two* of the following :  $2 \times 5 = 10$
- (a) DMA
  - (b) Subroutine
  - (c) Stepper Motor Interfacing
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