

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

00473

Term-End Examination

December, 2016

BIEL-008 : MICROCONTROLLERS

Time : 3 hours

Maximum Marks : 70

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

1. (a) Differentiate between RISC and CISC CPU architecture. 5
- (b) Describe the hardware features of the 8051 microcontroller. 5
2. List the internal registers of the 8051 microcontroller and their functions. 10
3. Explain the different hardware and software interrupts available in 8051 and also explain how hardware interrupt differs from software interrupt. 6+4

4. Discuss memory organisation of 8051 microcontroller, data memory, program memory, SFR and accessing external memory. 10
5. Differentiate between the following : 3+3+4
- (a) RET and RET1
 - (b) AJMP and LJMP
 - (c) Bit level and Byte level logical operations
6. Write an ALP to divide the data in RAM locations 3E H by the number 12H; put the quotient in R4 and the remainder in R5. 10
7. Explain the different serial data communication modes for the 8051 in detail. 10
8. (a) Explain why mode 0 is not suitable for 8051 communication. 5
- (b) List two reasons why stop bits are used in asynchronous communication. 5
9. Write short notes on the following : 10
- (a) Data Types and Time Delays in 8051C
 - (b) Interfacing 8051 to LCD

10. Explain the functions of the following instructions. Also mention the addressing modes of each instruction :

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- (a) **ADD A, @ Rp**
 - (b) **INC A**
 - (c) **CPL A**
 - (d) **ANL A, # n**
 - (e) **XCH A, R2**
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