

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

Term-End Examination

June, 2011

BIEL-008 : MICROCONTROLLERS

Time : 3 hours

Maximum Marks : 70

Note : Attempt five questions and question No. 7 is compulsory. Assume data wherever is not provided.

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1. (a) What is the difference between a microprocessor and microcontroller ? Discuss in brief the various applications of microcontroller. 7
 - (b) Draw the Harvard and Von Neuman CPU architecture and explain it. 7

 2. (a) What are the major register of the 8051 and show that their use with the simple instructions MOV and ADD ? 7
 - (b) What are the major difference between the 8051 and 8031 microcontroller ? 7

 3. (a) Draw the pin diagram of 8051 microcontroller and explain the purpose of each pin of the 8051 microcontroller ? 9
 - (b) Explain why program the 8051 in C. 5

4. (a) Write the 8051 C program to send hex values for ASCII characters of 0,1,2,3,4,5, A,B,C and D to port P1. 7
- (b) Two numbers are stored in registers R0 and R1, verify if their sum is greater than FFH. 7
5. (a) Describe serial communication features of the 8051 ? 7
- (b) With XTAL = 11.0592 MHz find the TH1 value needed to have the following baud rates. 7
- (i) 9600
- (ii) 2400
- (iii) 1200
6. (a) Write a program to transfer a letter 'Y' serially at 9600 baud continuously, and also to send a letter 'N' through port 0, which is connected to a display device ? 10
- (b) How are timers 0 and 1 started and stopped by instructions ? 4
7. Write short notes on *any two* 7x2=14
- (a) Interfacing 8051 to LCD
- (b) Interfacing 8051 to DC motor
- (c) Interfacing with Parallel and Serial ADC