

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

Term-End Examination

December, 2016

**BIEL-015 : MICROPROCESSOR AND ITS
APPLICATIONS**

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions. All questions carry equal marks. Assume suitable missing data, if any. Question no. 1 is compulsory. Use of scientific calculator is allowed.

1. (a) Explain the function of op code prefetch queue in 8086.
- (b) Explain the physical address formation in 8086 with an example.
- (c) What is the significance of HOLD signal in 8085 ?
- (d) Write the difference between assembler and compiler.
- (e) Explain the function of $\overline{C/D}$ and \overline{TXC} signals in 8251 USART. $5 \times 2 = 10$

2. (a) Describe the difference between CALL and RST instructions in terms of its process and execution time for 8085. 5
- (b) Draw the timing diagram of MVIA, 05H instruction for 8085. 5
3. (a) Explain the interrupt structure in 8085. What is the difference between vectored and non-vectored interrupt ? 5
- (b) What is stack ? Explain stack operation in detail with suitable examples. 5
4. (a) Specify the bit of a control word for 8255 which differentiates I/O mode and BSR mode. 5
- (b) Explain how the 8257 DMA controller transfers 64 k bytes of data per channel with eight address lines. 5
5. (a) Interface 2732 (4 k × 8) EPROM with 8085. The address range should begin at 0000H. 5
- (b) Explain the difference between static and dynamic RAM with a suitable diagram. 5

6. Write an 8085 assembly language program to find the largest number in a given data array of 10 numbers. The data memory starts with location 2500H. The largest number should then be stored at location 2600H. 10
7. Explain the functions of the following pins in 8086 : $4 \times 2 \frac{1}{2} = 10$
- (a) HOLD
 - (b) $\overline{DT/R}$
 - (c) \overline{TEST}
 - (d) \overline{LOCK}
8. Explain the functions of the following assembler directives/operators with suitable examples : $4 \times 2 \frac{1}{2} = 10$
- (a) DB
 - (b) EQU
 - (c) EXTERN
 - (d) LABEL
9. What do you mean by a macro ? What are the differences between a macro and a subroutine ? Explain your answer with suitable examples. 10

10. Write short notes on any *two* of the following : 2×5=10

- (a) Flag register and data type supported by 80386
 - (b) Salient features of 80486
 - (c) Comparison between microprocessors M68000 and 8085
 - (d) Interfacing of A/D converter with 8085
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