　　　　　　　BIEL-015

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

Term-End Examination

June, 2016

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BIEL-015 : MICROPROCESSOR AND ITS APPLICATIONS

Time : 3 hours　　　　　　　*Maximum Marks : 70*

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

1. (a) Explain the concept of segmented memory in 8086.

   (b) What is the significance of READY signal in 8085 ?

   (c) What is the difference between JUMP and LOOP instructions in 8086 ?

   (d) What are the assembler directives ?

   (e) Draw and discuss the status word format of 8251. *5×2=10*

2. (a) Explain the functions of SIM and RIM instructions in detail. *5*

(b) Draw and discuss the mode and status register of 8257 DMA Controller. *5*

3. Explain the functions of the following assembler directives/operators with suitable examples : $4 \times 2\frac{1}{2} = 10$

(a) DW

(b) OFFSET

(c) PROC

(d) ORG

4. Explain the functions of the following pins of 8086 : $4 \times 2\frac{1}{2} = 10$

(a) $\overline{RQ} / \overline{GT_0}$

(b) NMI

(c) DEN

(d) QS_0, QS_1

5. What is the difference between hardware and software interrupts ? Explain the term nested interrupt with a suitable example. *10*

6. Write an 8085 assembly language program to find the smallest number in a given data array of 10 numbers. The data memory starts from the location 2500H. The smallest data should be stored at location 2600H. *10*

7. (a) Interface 6116 (2k × 8) CMOS R/W memory with 8085. The address range should begin at 2000H. *5*

(b) Explain semiconductor memory and discuss its classification in detail. *5*

8. (a) Draw the timing diagram of the instruction OUT 05H. *5*

(b) Explain the significance of the following signals in 8251 : *5*

(i) $\overline{CTS}$

(ii) TXEMPTY

9. (a) Part A of the 8255A is set up in mode 1, and the status word is read as 18H. Is there an error in the status word ? Explain. *5*

(b) List the major components of the 8259A interrupt controller and explain their functions. *5*

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

(a) Minimum and Maximum mode of 8086

(b) Cycle stealing and Burst mode of DMA

(c) Salient features of 80386

(d) Interfacing of D/A converters with 8085