

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

00349 **Term-End Examination**
December, 2017

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

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any seven questions including Question no. 1 which is compulsory. All questions carry equal marks. Assume missing data suitably, if any.*

1. (a) Discuss the function of RIM instruction in 8085.
- (b) How does the microprocessor differentiate between data and instruction code ?
- (c) What is the function of PCHL instruction ?
Give an example.
- (d) What is the function of 8288 IC in 8086 based system ?
- (e) What are the hardware and software interrupts in 8086 ? *5×2=10*

- 2.** Explain the functions of the following interrupts used in 8086 : *10*
- (a) Divide-by-zero
 - (b) Single-step
 - (c) Break-point
 - (d) Overflow
- 3.** Design an 8085 based microcomputer consisting of four RAM chips of 4 K each and a ROM chip of 2 Kbytes. It is also connected to an I/O chip having two input ports and two output ports. Give the address of all these chips and I/O ports, if configured in
- (a) I/O mapped I/O, and
 - (b) Memory mapped I/O systems. *10*
- 4.** Explain the control word register of 8255 in I/O mode. Explain different I/O modes in which it can operate. *10*
- 5.** State the salient features of the microprocessors 80286, 80386 and 80486. Also give their block diagrams. *10*

6. Compare the 8-bit microprocessors M68000 and Z80 with 8085. 10
7. What is DMA data transfer scheme ? Discuss the functions of 8257 DMA controller. 10
8. Explain the functions of 8259A interrupt controller and its operation in fully nested mode. 10
9. Draw the functional block diagram for interfacing a seven-segment display and explain its operation. 10
10. Explain the following briefly : $4 \times 2 \frac{1}{2} = 10$
- (a) Machine Cycle
 - (b) Macros
 - (c) RST Instruction
 - (d) Instruction Format
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