

**B.Tech. - VIEP - COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

December, 2016

BICS-012 : MICROPROCESSOR

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions. All questions carry equal marks.

1. (a) How many address lines does an 8086 microprocessor have ? 2
- (b) How many memory addresses do the address lines allow 8086 to access directly ? 2
- (c) At any given time, 8086 works with four segments in the address space. What can be the maximum size of each segment ? 6
2. (a) Discuss the use of queue in 8086 microprocessor. How is it different from the one used in 8088 microprocessor ? 5
- (b) Explain the following 8086 instructions using suitable example for each : 5
 - (i) DAA
 - (ii) INT

3. (a) Draw an internal architecture of 8086 microprocessor and describe the functionalities of execution unit and bus interface unit. 8
- (b) What is the need of an instruction pointer in an 8086 microprocessor ? 2
4. Describe the operations an 8086 will perform when it executes each of the following instructions : 10
- ADD AX, BX
- MOV BX, 03FFH
- MOV AL, 0DBH
- MOV DH, CL
- MOV BX, AX
5. Describe how an assembly language program is developed and debugged using system tools such as editor, assembler, linker and debuggers. 10
6. Explain various types of indirect addressing modes of 8086 microprocessor with an example for each. 10
7. Write an assembly language program using 8086 to transfer a block of bytes from one location to the other. Make suitable assumptions. 10
8. Discuss how interrupts are handled in 8086 microprocessor. Explain various steps involved in the process. 10
9. What is DMA ? Explain the functioning of a typical DMA controller with the help of a block diagram. 10