BIEL-015

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

Term-End Examination

00624

June, 2017

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.*

1. (a) State the function of ALE Pin.

(b) What is the difference between minimum mode and maximum mode ?

(c) What are program control instructions ?

(d) What do you mean by intersegment direct addressing mode ?

(e) What is bit set/reset mode in 8255 ? *5×2=10*

2. (a) Explain the functions of SOD, RESET, HLDA, INTA Pins of 8085 microprocessor. *5*

(b) What are assembler directives ? Explain the functions of any five assembler directives/operators with examples. *5*

3. Discuss the operation involved in the execution of

(a) CALL and RETURN, and

(b) PUSH and POP

instructions with suitable example and diagram. *2×5=10*

4. With the help of a neat timing diagram, explain the instruction cycle of RSTA instructions. *10*

5. Discuss the advantages of memory segmentation. How is it implemented in 8086 microprocessor ? *10*

6. Distinguish between the following : *5+5*

(a) Vectored and Non-vectored interrupts

(b) Processor control instructions and Control transfer instructions

7. Discuss the use of stack. Can stack be formed in a ROM ? Sketch the content of SP and stack memory location after the execution of each of the following instructions in the given order :

Push B

Push D

if the initial values are :

SP = 1000_H, BC = 2030_H and DE = 4050_H. *10*

8. (a) Interface 4 kB × 4 RAM and 2 kB ROM with 8086 microprocessor. Give its memory map and circuit diagram. *5*

(b) Differentiate between static and dynamic memory. Also state their uses. *5*

9. (a) What is keyboard debouncing ? How is it taken care of in an 8279 keyboard interface ? *5*

(b) Discuss the functions of all pins of 8279. *5*

10. Explain the following instructions with examples : *5×2=10*

(a) DAA

(b) AAM

(c) LOOP

(d) SUB

(e) XLAT