Reg. No. ☐☐☐☐☐☐☐☐☐

BCACAC 209

Credit Based III Semester B.C.A. Degree Examination, Oct./Nov. 2016

(Common to all Batches)

MICROPROCESSORS

Time : 3 Hours

Max. Marks : 80

Note : *Answer **any ten** questions from Part – **A** and **any one full** question from **each** Unit in Part – **B**.*

PART – A

1. a) List any two features of 4004 microprocessor.   (10×2=20)

   b) Expand XMS and TPA.

   c) Represent 64 in unpacked and packed BCD format.

   d) Which registers move on to the stack with PUSHA instruction ?

   e) What is the purpose of LEA instruction ? Give example.

   f) Differentiate SUB and CMP instructions.

   g) What is the use of SI and DI registers in string manipulation instructions ?

   h) Differentiate intersegment and intrasegment jumps.

   i) What is IP register ? What is its use ?

   j) What is the purpose of STI and CLI instructions ?

   k) What is the use of NOP instruction ?

   l) List any two applications of microcontrollers.

P.T.O.

PART – B

Unit – I

2. a) What is a bus ? Explain how the different parts of computer system are connected through various buses.

   b) List the various multipurpose registers of 8086 and explain any five.

   c) Explain the following Assembler Directives.

      i) Assume   ii) DB   (5+6+4)

3. a) Explain Microprocessor based computer system with a neat diagram.

   b) With the diagram of the Flag register explain any four status flags.

   c) Write a note on :

      i) BCD data   ii) Byte sized data   (6+5+4)

Unit – II

4. a) Explain Register, Immediate and Direct addressing modes with examples to each.

   b) Explain the operation of PUSH and POP instruction.

   c) Explain the following string data transfer instructions with examples to each

      i) LODSB   ii) MOVSB   (6+5+4)

5. a) Briefly explain program memory addressing modes.

   b) Assume DS = 2000H, SS = 1000H BP = 0200H and DI = 0300H.

      Determine the physical address accessed by following instruction.

      i) MOV [BP + 20H], DX

      ii) MOV BL, [DI-100H]

   c) What is the purpose of segment override prefix ? Give example.   (6+5+4)

Unit – III

6. a) Differentiate the following instructions :

   i) AND and TEST   ii) NOT and NEG

   b) Explain MUL and DIV instructions with examples.

   c) Explain Short jump and Near jumps with examples.   (4+6+5)

7. a) Explain different Rotate instructions with examples.

   b) Explain LOOP, LOOPE and LOOPNE instructions with examples.

   c) Write an assembly level program to add two BCD numbers.   (6+5+4)

Unit – IV

8. a) Explain NEAR and FAR calls with suitable examples.

   b) Explain procedures with suitable example.

   c) Write a note on :

   i) WAIT   ii) BOUND   (6+5+4)

9. a) Explain the interrupts INTO and INT 3H.

   b) Explain the following instruction

   i) IRET   ii) HLT   iii) NOP

   c) What is microcontroller ? Write its block diagram.   (5+5+5)

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