Reg. No. | | | | | | | | | |

BCACAC 209

Credit Based Third Semester B.C.A. Degree Examination, Nov./Dec. 2015
(New Syllabus) (2013-14 Batch Onwards)
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 **(10×2=20)**

1. a) List different types of bus connections present in most of the computer systems.
   b) What is an assembler directive ? Give example for the directive used to store data in memory segment.
   c) List any four special purpose registers.
   d) What is the purpose of segment override prefix ? Give example.
   e) What is the use of SI and DI registers in string manipulation instructions ?
   f) What is the purpose of LEA instruction ? Give example.
   g) List all the ASCII arithmetic instructions.
   h) List the different instructions that control the direction flag with the syntax.
   i) Differentiate NOT and NEG instructions.
   j) Differentiate intersegment and intrasegment jumps.
   k) What is the purpose of call instruction ? Give example.
   l) Differentiate RET and IRET instructions.

P.T.O.

PART – B

Unit – I

2. a) Write the block diagram of microprocessor based computer system and explain each block.
   b) List the various multipurpose registers of 8086 and explain any four.
   c) Write a note on (i) BCD data format (ii) Byte sized data format. **(6+5+4)**

3. a) Write the diagram of the FLAG register and explain any 5 status flag bits.
   b) Represent :
      i) 358 in packed and unpacked BCD form.
      ii) (12.25) in single precision floating format.
   c) List the various segment registers and discuss the purpose of each segment register. **(5+6+4)**

Unit – II

4. a) Explain any 3 data addressing modes with suitable diagrams and examples.
   b) Explain the operation of PUSH and POP instructions.
   c) Explain LDS and LES instructions with examples to each. **(6+5+4)**

5. a) Suppose DS = 75A0H, SS = 9500H, BX = 0450H, DI = 0575H, BP = 475H, determine the address accessed by each of the following instructions.
      i) MOV CL, [BX + DI]
      ii) MOV [BP], BX.
   b) Briefly explain program memory addressing modes.
   c) Explain the following string data transfer instructions with example to each.
      i) LODSB
      ii) MOVSB. **(5+6+4)**

Unit – III

6. a) Explain different Rotate instructions with examples to each.
   b) Explain Direct short jump and Direct near jumps with examples.
   c) Explain SCASB and CMPSB instructions. **(8+4+3)**

7. a) Write a program to find GCD and LCM of two numbers.
   b) Explain LOOP, LOOPE and LOOPNE instructions with exampies.
   c) Explain BCD arithmetic instructions with suitable examples. (6+5+4)

Unit – IV

8. a) Explain NEAR and FAR calls with suitable diagrams.
   b) Write a note on :
      i) WAIT
      ii) HLT.
   c) What is a microcontroller ? Write its block diagram. (6+4+5)
9. a) Explain (i) INT 3 (ii) INTO.
   b) List the various microcontrollers with their features.
   c) List the different steps of handling software interrupts in 8086. (4+5+6)