NS – 615

V Semester B.C.A. Degree Examination, Nov./Dec. 2016
(CBCS) (Fresh)
COMPUTER SCIENCE
BCA – 505 : Microprocessor and Assembly Language
(2016-17 and Onwards)

Time : 3 Hours Max. Marks : 70

Instruction : *Answer* ***all*** *Sections.*

SECTION – A

I. Answer **any ten** questions : (10×2=20)

1) What is the function of instruction register and decoder ?
2) Draw the flag register mentioning the flag status.
3) What is immediate addressing ? Mention an example.
4) Write any two instructions to clear the contents of accumulator register.
5) Find the contents of accumulator after executing the following block of program segment. Content of B register is 3EH. initially.

```
MOV A, B
RLC
RLC
HLT.
```

6) Explain DAA instruction.
7) Draw the flowchart to generate delay loop using register.
8) Differentiate between absolute and partial decoding.
9) Two consecutive memory locations store 3EH and 2FH data respectively. Find the content of accumulator after executing following segment of program.

```
LX1 H 2050H
MOV A, M
INXH
SUBM
INXH
MOV M, A
```

10) What is I/o interfacing ?
11) Draw the bit pattern of control word for 8255.
12) Explain the priority modes of 8259.

P.T.O.

SECTION – B

II. Answer **any five** questions : (5×10=50)

13) a) Draw the pin configuration of 8085 processor. 5

b) With diagram explain how control signals are generated ? 5

14) a) Write an ALP to add two-N byte numbers. 5

b) Classify the instructions based on sizes and explain each with an example. 5

15) a) Explain i) STAX D ii) ADC R iii) XCHG instructions. 6

b) Explain unconditional jump instruction. 4

16) a) Write an ALP for block transfer of data bytes. 5

b) Calculate the count to obtain 100 μs loop delay. Let the clock frequency be 2MHz.

```
    MVI B, Count
loop : NOP     4T
       NOP     4T
       DCR B   4T
       JNZ loop  10/7T
```

17) a) Explain nesting of subroutines with an example. 5

b) Explain memory read machine cycle with timing diagram. 5

18) Compare memory mapped I/o and I/o mapped I/o. 5

19) a) What is an interrupt ? Explain the classification of interrupts. 10

b) Explain RIM instruction with bit pattern. 6

20) a) Explain the functional block diagram of 8255 PPI. 4

b) Write a note on interfacing devices. 5