2018

BCA 3rd Semester Examination

MICROPROCESSOR

PAPER—2105

Full Marks : 70

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. *1* and any *four* from the rest.

1. Answer any *five* questions : 5×2

(a) Compare assembly and high-level language.

(b) Write down the functions of IO / $\overline{M}$ and ALU signals of 8085 microprocessor.

(c) Distinguish between JMP and CALL instruction.

(d) What is the difference between microcomputer and microprocessor ?

(e) The program counter and stock pointer are 16 bit registers — why ?

(f) How much time is required to execute an instruction of 10 T-states ? (Clock frequency 5 MHz)

(g) Explain tri-state buffer.

(h) Explain the function of parity flag.

2. (a) Draw and explain internal architecture of 8085 microprocessor.

(b) Write a program in 8085 assembly language to sort a set of numbers in assending order. 8+7

3. (a) What do you understand by DMA ? What are the advantages of it ?

(b) Draw and explain the architecture of 8257 DMA controller. (4+3)+8

4. (a) Explain PUSH and POP instructions of 8085 microprocessor.

   (b) Write a program in 8085 assembly language to counter the number of 1's in a data byte.

   (c) Explain the different addressing modes of 8085 microprocessor. 4+6+5

5. (a) Draw the timing diagram for OUT 82H and MVI A, 02H instruction.

   (b) What are different interrupt in 8085 ? Give their location.

   (c) Distinguish between maskable and non-maskable interrupt.

   (d) Write the function of ALE. 5+(2+2)+3+3

6. (a) Explain how 20-bit physical address is generated in 8086 microprocessor.

   (b) What are the advantage of having memory segmentation ?

   (c) What are the main function performed by BIU and EU unit of 8086 microprocessor ?

   (d) How does 8086 differentiate between an opcode and data ? 3+3+6+3

7. Write short notes on : 3×5

(a) Interrupt Service Routine ;

(b) MIN/MAX mode operation of 8086 microprocessor ;

(c) Synchronous mode of data transfer.

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