Co-403/Micro/4th Sem/2018/M

MICROPROCESSOR

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

PART – A

Marks – 25

1. Match the contents of column A with the contents
   of column B : $10 \times 1 = 10$

Column – A	Column – B
(i) IO/M	(a) DMA
(ii) DMA controller	(b) Instruction cycle
(iii) $S_1 = 1, S_2 = 0$	(c) 8085
(iv) Data transfer scheme	(d) Goes high to indicate I/O operation
(v) Timer	(e) General purpose register

Column – A	Column – B
(vi) Segment registers	(f) Unmaskable interrupt
(vii) INTR	(g) 8086
(viii) Fetch cycle	(h) Indicates I/O read operation
(ix) SP	(i) 8257
(x) MOV B, A	(j) 8253
	(k) Maskable interrupt
	(l) Special purpose register
	(m) Register Addressing

2. Fill in the blanks :   5×1=5

(i) _____ converts assembly language programs to object code.

(ii) 8 bits can address _____ memory space.

(iii) _____ contains the address of the instruction to be executed.

(iv) 8086 address bus is _____ bits.

(v) 8085 has _____ flags.

3. Choose the correct option : 5×1=5

(i) If data is present in a register and it is referred using the particular register, then it is

(a) direct addressing mode

(b) register addressig mode

(c) immediate addressing mode

(d) indexed addressing mode

(ii) DIP stands for

(a) Digital Inline Package

(b) Direct Inline Package

(c) Dual Inline Package

(d) None of these

(iii) When the speed of microprocessor and device match _____ data transfer is used.

(a) DMA

(b) Asynchronous

(c) Synchronous

(d) Interrupt driven

(iv) 8255 PPI has

    (a) five ports

    (b) three ports

    (c) four ports

    (d) two ports

(v) 8251 (USART) is a

    (a) 30 pin DIP

    (b) 40 pin DIP

    (c) 26 pin DIP

    (d) 28 pin DIP

4. State true or false : $5 \times 1 = 5$

    (i) 8086 has six addressing modes.

    (ii) 8259 has eight interrupt request line.

    (iii) CMP is an example of implicit addressing.

    (iv) In case of memory mapped I/O scheme, I/O devices are treated separate from memory.

    (v) Intel 4008 was the first 4-bit microprocessor.

PART – B

Marks – 45

5. Answer the following questions (any *five*) :

$3 \times 5 = 15$

   (i) Define microprocessor and state its few applications.

   (ii) What is multiplexing ?

   (iii) Explain the DMA scheme.

   (iv) Write an ALP to calculate the area of a circle.

   (v) State the function of RESET IN, RESET OUT and HLDA pins in 8085.

   (vi) Specify the purpose of zero flag and parity flag.

6. Answer the following questins (any *four*) :

$5 \times 4 = 20$

   (i) Write a brief note on the interrupts of 8085.

   (ii) Explain the Programmable Interval Timer chip stating its different operational modes.

   (iii) Draw the timing diagram of I/O read cycle.

(iv) Explain interfacing of a LED display with the help of a diagram.

(v) Explain with suitable diagram, interfacing of relay with microprocessor.

7. State the function of the following blocks of 8085 :

2×5=10

(i) Instruction decoder.

(ii) General purpose registers.

(iii) Stack pointer.

(iv) Timing and control unit.

(v) Accumulator.