

Total No. of printed pages = 6

Co-403/Micropro/4th Sem/2017/N

MICROPROCESSOR

Full Marks – 70

Time – Three hours

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

PART – A

Marks – 25

1. Answer the questions very precisely (preferably in a sentence or two) : 1×5=5
 - (i) State the size of address and data bus in 8085 and 8086 microprocessor.
 - (ii) Name the different segment registers in 8086.
 - (iii) Which is the non-maskable interrupt in 8085 ?
 - (iv) List the 16-bit registers of 8085.
 - (v) What is the use of ALE ?

[Turn over

2. Match the contents of column A with the contents of column B : 1×5=5

Sl. No.	Column A	Column B
1	IO/M	Interrupt service subrou-tine
2	DMA controller	8253
3	$S_1=1, S_2=0$	Indicates I/O read opera-tion
4	Data transfer	Goes high to indicate I/O operation
5	Timer	8257

3. Fill in the blanks : 1×10=10

- (i) The is an 8-bit register used to store data and to perform arithmetic and logical operations.
- (ii) The instruction cycle consists of ___ and ___ cycle.
- (iii) RISC stands for _____ set computer.
- (iv) An instruction has two parts, ___ and ___.
- (v) The instruction MOV A, B belongs to ___ addressing mode.

- (vi) The clock frequency required by 8085 is ___.

- (vii) 8255 has ___ operating modes.

- (viii) The data transfer speed of the devices is same in ___ mode of data transfer.

- (ix) The instruction JNZ belongs to ___ group of instruction.

- (x) 16 bit address bus can address ___ locations.

4. Choose the correct option : 1×5=5

- (i) 8086 has

- (a) 35 pins (b) 30 pins
(c) 40 pins (d) 45 pins

- (ii) SIM stands for

- (a) Select interrupt mask
(b) Set interrupt mask
(c) Sorting interrupt mask
(d) None of these

(iii) Output of the assembler in machine codes is referred to as

- (a) Object program
- (b) Source program
- (c) Symbolic code
- (d) None of these

(iv) Which of the following statements for Intel 8085 is correct ?

- (a) Program counter specifies the address of the instruction last executed.
- (b) Program counter specifies the address of the instruction being executed.
- (c) Program counter specifies the address of the instruction to be executed.
- (d) None of the above.

(v) Processor status word of 8085 microprocessor has five flags

- (a) S, Z, AC, P, CY
- (b) S, OV, AC, P, CY
- (c) S, Z, OV, P, CY
- (d) S, Z, AC, P, OV

PART - B

Marks - 45

5. Answer any *five* of the following questions :

3×5=15

(i) List out the five categories of the 8085 instructions giving examples of the instructions for each group.

(ii) Explain the function of the signals HOLD, READY and SID.

(iii) Explain the memory mapped I/O addressing scheme.

(iv) What are the different flags available in status register of 8086 ?

(v) State the function of MIN/MAX pin in 8086.

(vi) Specify the function of 8251 chip.

6. Answer any *four* of the following questions :

5×4=20

(i) Draw and explain the timing diagram of memory write cycle with example.

(ii) With suitable examples explain 8085 addressing modes in detail.

(iii) Write an ALP to evaluate the following expression $A+B * D/C - E$.

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

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

7. Draw the functional block diagram of 8085 microprocessor and explain the function of each block.

$3+7=10$