Total No. of Questions—**8**] [Total No. of Printed Pages—**4**

Seat No.	

[5459]-188

S.E. (Computer Engg.) (II Sem.) EXAMINATION, 2018

MICROPROCESSOR AND INTERFACING TECHNIQUES

(2012/2015 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Answer total **4** questions **1** *or* **2**, **3** *or* **4**, **5** *or* **6**, **7** *or* **8**.

(*ii*) Neat diagram must be drawn wherever necessary.

(*iii*) Figures to the right indicate full marks.

1. (*a*) Draw and explain architecture of i7 processor. [6]

(*b*) Differentiate between .COM and .EXE programs. [3]

(*c*) Explain the following addressing modes with example : [3]

(*i*) Based scaled indexed addressing mode

(*ii*) Direct addressing mode

(*iii*) Register indirect addressing mode.

Or

2. (*a*) Write initialization instruction for 8259 interrupt controller to meet the following specification. Assume port addresses 40H and 41H. [4]

(*i*) Interrupt type 64

P.T.O.

(*ii*) Level triggered, single, ICW_4 needed

(*iii*) Mask interrupts IR_2 and IR_5

(*b*) Write a short note on TSR and PSP. [4]

(*c*) Draw and explain write timing diagram of 8086 minimum mode. [4]

3. (*a*) Draw and explain block diagram of 8255 PPI. [3]

(*b*) Enlist difference between synchronous and asynchronous communication. [3]

(*c*) With proper format explain the following control word of 8279 : [6]

(*i*) Display write inhibit/blanking

(*ii*) Keyboard/Display mode set

(*iii*) Write display RAM.

Or

4. (*a*) Draw and explain showing how a DMA controller is interfaced with microprocessor system. [4]

(*b*) Calculate count value to generate square wave of 1 ms with input frequency of 750 kHz using 8253. Design appropriate control word for counter 1. [4]

(*c*) Define the following terms : [4]

(*i*) Resolution

(*ii*) Accuracy

(*iii*) Monotonicity

(*iv*) Conversion time.

5. (*a*) Draw and explain control and status word of 8087. [6]

(*b*) Draw the schematic of 8086 microprocessor operating in maximum mode with all required support chips. Explain working in detail. [7]

Or

6. (*a*) Explain the following instructions of 8087 with example : [3]

(*i*) FSQRT

(*ii*) FLDPI

(*iii*) FPTAN.

(*b*) Explain any *four* data types of 8087 with proper format. [4]

(*c*) Draw 8086 based minimum mode system interfaced with 4×4 matrix keyboard using 8255 PP1 using port A. Assume the following addresses : Port A—61H, Port B—63H, Port C = 65, CWR = 67H. [6]

7. (*a*) Write feature of i5 processor. [4]

(*b*) Write a short note on serial ATA Controller and Quick Path Interconnect. [4]

(*c*) Draw and explain block diagram of ICH10 configuration. [5]

Or

8. (*a*) Draw and explain block diagram of Intel i5 processor. [7]

(*b*) Explain the features of 82801 ITR I/O controller hub. [4]

(*c*) Draw basic blocks of X58 chipset. [2]