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Reg. No

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fifth Semester – Regular) Examinations, December – 2022

BECPC5010 – Microprocessors and Microcontrollers

(ECE)

Time: 3 hrs

Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)   **(1 x 10 = 10 Marks)**

Q.1. Answer *ALL* questions   [CO#]   [PO#]

a. The program counter in 8085 microprocessor is a 16-bit register, because   CO1   PO2

    (i)   It counts 16 bits at a time   (ii)   There are 16 address lines

    (iii)   It has to fetch two 8-bit data at a time.   (iv)   It facilitates the users storing 16-bit data temporarily

b. Program status word of 8085 microprocessor has five flags. They are   CO1   PO3

    (i)   S, Z, AC, P, CY   (ii)   S, OV, AC, P, CY

    (iii)   S, Z, OV, P, CY   (iv)   S, Z, AC, P, OV

c. Which interrupt has the highest priority in 8085 microprocessor?   CO1   PO1

    (i)   INTR   (ii)   RST 6.5

    (iii)   RST 5.5   (iv)   TRAP

d. The pin configuration of 8086 is available in the_____   CO2   PO2

    (i)   40 pin   (ii)   14 pin

    (iii)   24 pin   (iv)   20 Pin

e. The size of the instruction queue in the 8086 is   CO2   PO3

    (i)   2 Bytes   (ii)   64 Bytes

    (iii)   6 Bytes   (iv)   1MB

f. In a 8086 microprocessor, after each execution of the PUSH instruction the stack pointer is   CO2   PO2

    (i)   incremented by 1   (ii)   decremented by 1

    (iii)   incremented by 2   (iv)   decremented by 2

g. How many pins does the 8255 PPI IC contains?   CO3   PO1

    (i)   40   (ii)   32

    (iii)   20   (iv)   24

h. DMA stands for   CO3   PO3

    (i)   Direct memory access   (ii)   Direct memory allocation

    (iii)   Data memory access   (iv)   Data memory allocation

i. Which register contains all the flags of the 8051?   CO4   PO1

    (i)   A   (ii)   SP

    (iii)   PSW   (iv)   PC

j. The 8081 microcontroller I/O port that does not have a dual-purpose role is: CO4   PO4

    (i)   Port-0   (ii)   Port-1

    (iii)   Port-2   (iv)   Port-3

PART – B: (Short Answer Questions)　　　　　　　　**(2 x 10 = 20 Marks)**

Q.2. Answer *ALL* questions　　　　　　　　　　　　　　　　[CO#]　[PO#]

a.	What is Stack Pointer?	CO1	PO2
b.	What the function of S0 and S1 signal in 8085 microprocessor?	CO1	PO1
c.	What is the significance of word length of a microprocessor?	CO2	PO3
d.	What is the status of PSW in 8085 microprocessor after the operation SUB B by considering the value present at accumulator=96H and at register B=24H before the operation?	CO2	PO4
e.	How much memory, in terms of bits, can be interfaced with the 8086	CO1	PO1
f.	Find out the physical address by considering the segment address as 3000H and offset address as 1001H.	CO3	PO1
g.	What is the maximum memory size of segments in 8086 microprocessor?	CO4	PO2
h.	What is handshake port?	CO4	PO3
i.	What the significance of bit addressable RAM?	CO2	PO3
j.	What is the difference between SJMP and LJMP?	CO2	PO2

PART – C: (Long Answer Questions)　　　　　　　　**(10 x 4 = 40 Marks)**

Answer *ALL* questions　　　　　　　　　　Marks　　[CO#]　[PO#]

			Marks	[CO#]	[PO#]
3. a.	Write an assembly language program to mask off the lower nibble of a 8-bit hexadecimal number using 8085 microprocessor.		5	CO1	PO2
b.	Explain the architecture of 8085 microprocessor with suitable diagram?		5	CO1	PO3
	(OR)				
c.	What is meant by priority of interrupts and explain the interrupts of 8085 microprocessor?		5	CO1	PO4
d.	Explain the following instructions of 8085 microprocessor with suitable examples: HLT (ii) LHLD (iii) LXI (iv) CMA		5	CO1	PO1
4. a.	Describe the features of 8086 microprocessor?		5	CO2	PO2
b.	Explain the function of different flags in the 8086 microprocessor with suitable diagram.		5	CO2	PO3
	(OR)				
c.	What is pipelining?		2	CO2	PO4
d.	Explain the minimum mode configuration of 8086 microprocessor with suitable diagram?		8	CO2	PO1
5. a.	Explain any one of the modes of 8255 in detail?		5	CO3	PO2
b.	Draw the block diagram of 8279 and explain it.		5	CO3	PO3
	(OR)				
c.	What the function of NMI signal?		2	CO3	PO4
d.	How the microcontroller is different from microprocessor justify?		8	CO3	PO1
6. a.	Describe the arithmetic instructions of 8051 microcontroller with suitable examples?		5	CO4	PO2
b.	Explain the block diagram of 8051 microcontroller with suitable diagram?		5	CO4	PO3
	(OR)				
c.	Explain the internal memory organisation of 8051 microcontroller?		5	CO4	PO4
d.	What is addressing mode and explain the various addressing modes available in the 8051 microcontroller?		5	CO4	PO1

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