GIET UNIVERSITY, GUNUPUR – 765022

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

BPCEL5020 / BPCEE5020 - Microprocessors & Microcontrollers

(EE&EEE)

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. In 8085 MP, the register used to hold the address of stack top is   [CO1] [PO1]

(i)	Stack pointer	(ii)	Address latch
(iii)	Program counter	(iv)	General purpose register

b. Nature of address bus is --------------   [CO4] [PO1]

(i)	Bidirectional	(ii)	Unidirectional
(iii)	Quasi-bidirectional	(iv)	None of the above

c. Program status word of 8085 microprocessor has five flags. They are   [CO1] [PO2]

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

d. The bits used to select the banks in 8051are   [CO4] [PO1]

(i)	RS0 and RS2	(ii)	RS1 and RS0
(iii)	RS0 and RS3	(iv)	RS1 and RS2

e. Which one of the following addressing technique is not used in 8085 microprocessor?   [CO1] [PO1]

(i)	Register	(ii)	Immediate
(iii)	Register indirect	(iv)	Relative

f. Intel 8255 is used as a ……………   [CO3] [PO1]

(i)	Timer	(ii)	IO ports
(iii)	Reset	(iv)	PPI

g. When the bit position D7 is 0 means ……….... will be selected.   [CO3] [PO1]

(i)	IO mode	(ii)	Only Input
(iii)	BSR mode	(iv)	Only Reset mode

h. A direct memory access (DMA) transfer replies   [CO3] [PO1]

(i)	Direct transfer of data between memory and accumulator	(ii)	Direct transfer of data between memory and I/O devices without the use of microprocessor
(iii)	Transfer of data exclusively within microprocessor registers	(iv)	All of the above

i. Which interrupt has the lowest priority?   [CO3] [PO1]

(i)	INTR	(ii)	TRAP
(iii)	RST7.5	(iv)	RST5.5

j. Operating frequency of 8051 MC is ------------   [CO2] [PO1]

(i)	11 MHz	(ii)	11.0592MHz
(iii)	10 MHz	(iv)	9 MHz

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

Q2. Answer ALL questions   CO #   PO #

a. Why accumulator is called as special purpose register?   [CO1]   [PO1]

b. What do you mean by PPI?   [CO3]   [PO1]

c. What the function of HOLD and HLDA signals in 8086 microprocessor?   [CO2]   [PO2]

d. Calculate the control word to set PC2 and reset PC4 bits.   [CO4]   [PO1]

e. Difference between RET and RETI instruction.   [CO2]   [PO1]

f. Give an example of immediate and direct addressing mode of 8086 MP.   [CO3]   [PO3]

g. How many banks are present in 8051 MC?   [CO2]   [PO2]

h. Why the segment size is 64 KB in 8086?   [CO4]   [PO1]

i. Draw the PSW of 8051 MC.   [CO3]   [PO3]

j. Difference between MOVSB and MOVSW instruction.   [CO2]   [PO1]

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

Answer *ALL* questions   Marks   CO #   PO #

3.a. Explain about all the registers of 8085 MP with their operations.   5   [CO1]   [PO1]

b. Explain about the HOLD, HLDA, NMI, AD0-AD7 and ALE control signals of 8085 MP.   5   [CO1]   [PO2]

(OR)

c. Write an assembly language program of 8085 MP to find out the largest number from a series of numbers and store the result in 5000H memory location.   5   [CO1]   [PO4]

d. Differentiate memory mapped I/O and I/O mapped I/O.   5   [CO1]   [PO2]

4.a. Draw and explain the architecture of the 8086 MP in details.   5   [CO2]   [PO1]

b. Define bus cycle. Draw and explain the memory read bus cycle of minimum mode operation.   5   [CO2]   [PO3]

(OR)

c. Define addressing mode. Explain all addressing modes of 8086 MP with suitable examples.   7   [CO3]   [PO1]

d. What is the use of DAA instruction? With an example explain it.   3   [CO3]   [PO2]

5.a. What do you mean by PPI? Explain in details with suitable diagram.   6   [CO3]   [PO1]

b. Explain in details about the I/O mode operations of 8255. Calculate the control word when all the ports are working as input ports and the mode of operation is mode-0.   4   [CO3]   [PO4]

(OR)

c. Draw the minimum and maximum mode configuration of 8086 microprocessor and explain in details?   7   [CO3]   [PO2]

d. WAP to multiply two 8-bit numbers i.e. 45H & 78H using instruction of 8086 MP.   3   [CO2]   [PO1]

6.a. What do you mean by DMA? Explain about the DMA data transfer scheme in details.   5   [CO4]   [PO1]

b. Explain about the RAM organization in 8051.   5   [CO4]   [PO2]

(OR)

c. What do you mean by addressing mode? Write about the addressing modes of 8051 with suitable examples.   5   [CO4]   [PO2]

d. Difference between MP and MC.   5   [CO3]   [PO1]

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