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GIET UNIVERSITY, GUNUPUR – 765022
B. Tech (Fifth Semester Regular) Examinations, December – 2023
21BELPC35002 – Micro Processors and Microcontrollers
 (EE & EEE)

Time: 3 hrs

Maximum: 70 Marks

Answer all questions
(The figures in the right hand margin indicate marks)

PART – A**(2 x 5 = 10 Marks)**

Q.1. Answer <i>ALL</i> questions	CO #	Blooms Level
a. What is the function of Program Counter?	CO1	K1
b. How many interrupts are available in 8086 MP? How much memory is reserved for interrupts?	CO2	K1
c. If a microprocessor is capable of addressing 1MB of memory, then find out the width of the address bus?	CO2	K1
d. What are the different modes present in 8255 IC? Calculate the bit configuration to set those modes.	CO3	K1
e. What is the operation carried out when 8051 executes the instruction? MOVC A, @A+DPTR?	CO4	K1

PART – B**(15 x 4 = 60 Marks)**

<u>Answer <i>ALL</i> questions</u>	Marks	CO #	Blooms Level
2. a. What do you mean by addressing mode? Explain about the addressing modes of 8085 MP with suitable example.	7	CO1	K1
b. WAP to find out the smallest number from 6 numbers using register indirect addressing mode and store the result in 7000H memory location.	8	CO1	K6
(OR)			
c. What do you mean by bus? Explain about address bus, data bus and control bus organization with suitable diagram.	7	CO1	K1
d. What do you mean by DMA? Explain in details about the DMA data transfer scheme.	8	CO2	K1
3.a. Explain the maximum mode configuration of 8086 microprocessor with suitable diagram.	8	CO1	K4
b. Explain the arithmetic and logical instructions of 8086 MP.	7	CO1	K4
(OR)			
c. Draw and explain the memory read bus cycle of maximum mode operation.	8	CO2	K4
d. WAP using the instructions of 8086 MP to divide an 8-bit number i.e. 47H by	7	CO1	K6

3H and store the results in 0600H and 0700H offset addresses.

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| 4.a. | What do you mean by PPI? Explain the working principle of PPI with suitable diagram. | 8 | CO3 | K4 |
| b. | Mention the features of 8255. | 7 | CO3 | K1 |

(OR)

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|------|--|---|-----|----|
| c. | What do you mean by control word? How it helps to function the ports either as input port or as output port? Explain about the BSR mode operation in detail. | 8 | CO3 | K1 |
| d. | What are the modes present in 8255? Explain about the BSR mode in details. Also calculate the control word to set and reset the PC2 and PC5 bits. | 7 | CO3 | K4 |
| 5.a. | Draw and explain the architecture of 8051 Microcontroller in detail. | 8 | CO4 | K2 |
| b. | List out the arithmetic instructions of 8051 microcontroller with suitable example. | 7 | CO4 | K2 |

(OR)

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|----|--|---|-----|----|
| c. | Answer the following questions with respect to 8051 MC | 8 | CO4 | K2 |
| | 1) Define DPTR | | | |
| | 2) MOV 50H, #50H | | | |
| | 3) XCHD A, R1 | | | |
| | 4) MOV A, @R1 | | | |
| | 5) MOV R6, 50H | | | |
| d. | What are the banks available in 8051? How the banks can be selected? Explain about all the banks with their corresponding addresses in detail. | 7 | CO4 | K1 |

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