QP Code: SN23BTECH213 | Reg. No | | | | | | | | | | | AY 23

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Fifth Semester - Regular) Examinations, November 2025

23BELPC35002/23BEEPC35002 – Microprocessors and Microcontrollers (EE/EEE)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is the need of bus? Why data bus is bidirectional in nature?	CO1	K1
b. Is CS=2532H and IP = 4789H than find out the start, end and operand's address.	CO3	K1
c. How the banks can be selected in 8051 MC?	CO5	K3
d. Draw the control word format of BSR mode of 8255.	CO4	K1
e. What do you mean by USART?	CO3	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Explain in detail about the function BIU and EU of 8086 MP with suitable diagram.	5	CO2	K2
b. Explain about the NMI, HOLD, CLK, QS1and QS0 control signals of 8086 MP.	5	CO2	K2
(OR)			
c. List out the logical instructions of 8086 MP with suitable example.	5	CO3	K1
d. Write an assembly language program to mask off the lower nibble and upper nibble of 8-bit number i.e. 57H and store the result in 5000H memory location.	5	CO1	K6
3.a. Draw and explain the memory write bus cycle of minimum mode operation.	5	CO2	K3
b. Explain the functional operations of registers present in 8085 processor.	5	CO1	K2
(OR)			
c. Mention the features of 8255 PPI.	5	CO4	K1
d. Explain in details about the BSR mode operation of 8255. Calculate the control word of 8255 for BSR mode to set the PC2 and to reset the PC7bits.	5	CO4	K2
4.a. Draw the maximum mode configuration of 8086 and explain.	5	CO2	K3
b. What are the data transfer schemes are present? Explain about the direct memory access data transfer scheme in details.	5	CO1	K1
(OR)			
c. Draw the architecture of Intel 8257 and explain the working principle in details.	5	CO4	K3
d. Discuss RAM memory space allocation of 8051 microcontroller.	5	CO5	K2
5.a. Explain about the interrupts of 8086 in details.	5	CO3	K2
b. Draw the architecture of 8051 MC and explain.	5	CO5	K3
(OR)			
c. List out the addressing modes of 8086 MP with suitable example.	5	CO3	K1

d.	Explain the following instructions 1) INC A 2) MOV A, @R0 3) MOVC A,@ A+PC 4) MUL AB 5) RL A	5	CO5	K2
6.a.	Explain about the interrupts of 8051 MC. List out the interrupts according to the priority.	5	CO6	K1
b.	WAP to multiply and divide the two 8-bit numbers (8EH and 04H) using the instructions of 8051 MC for immediate addressing mode and store the result in registers R4 and R1.	5	CO5	K6
	(OR)			
c.	What do you mean by segmented memory concept? Mention the advantages of segmented memory concept.	5	CO2	K1
d.	Explain about the bank organization of 8086 MP. What are the control signals used for bank selection in 8086 MP?	5	CO2	K1

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