Registration No.: | | | | | | | | | | |

Total Number of Pages: 02

Course: B.Tech
Sub_Code: REC5C003

5th Semester Back Examination: 2025-26
SUBJECT: Microprocessor & Microcontroller
BRANCH(S): ECE, ETC
Time: 3 Hours
Max Marks: 100
Q.Code: U219

Answer Q1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right-hand margin indicate marks.

Part-I

Q1 **Answer the following questions:** **(2 x 10)**

a) What is a bus in microprocessor?
b) In an 8-bit microprocessor 8085, how many 16-bit registers are there?
c) What is the role of ALU and Accumulator in a microprocessor?
d) What is 8279?
e) Which errors will happen if a label within a macro is not declared local?
f) What do you mean by SEGMENT and ENDS.
g) Mention different types of the interrupts used in 8086.
h) What is PSW in 8051 microcontrollers?
i) What are the two functional parts of 8086 microprocessor?
j) Mention the additional features available in 80386 over 8086 processor.

Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Explain about the multiplexed address and data bus of 8085.
b) With a timing diagram, explain 8085 microprocessor bus activities during a memory write operation.
c) Draw the timing diagram for the execution of the 8086 MOV instruction.
d) How various control signals are generated in 8085 microprocessors, for external operations?
e) Explain the minimum mode of 8086 with neat sketch.
f) Explain, how to interface keyboard and the display using keyboard/display controller.
g) Why is DAC required? Explain DAC interface with diagram.
h) Explain MOV, MOVC, MOVX instructions of 8051 Microcontroller.
i) Differentiate between call and subroutine.
j) Explain, how is the physical address generated in 8086?
k) Explain in detail about arithmetic and control instruction set in 8051.
l) Explain the following 8051 instructions with example.
MUL, SWAP and SJMP

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3	With neat sketch explain the architecture/ functional block diagram of 8051 microcontroller.	**(16)**
Q4	Write an 8051 ALP to create a square wave of 66 % duty cycle on bit 3 of port 1.	**(16)**
Q5	Write an 8085-assembly language program using minimum number of instructions to add the 16-bit no. in BC, DE & HL. Store the 16-bit result in DE pair.	**(16)**
Q6	Explain with neat sketch for interfacing CRT terminal with 8051 microcontrollers.	**(16)**