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

Total Number of Pages: 02 **Course: IDD (B.Tech and M.Tech)**
Sub_Code: REC5C003

5th Semester Regular/Back Examination: 2024-25
SUBJECT: Microprocessors & Microcontrollers
BRANCH(S): ECE, ETC, EC
Time: 3 Hours
Max Marks: 100
QP.Code : R074
Answer Question No.1 (Part-1) 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) Mention the valid register pairs of 8085 microprocessor.
b) Mention the function of instruction queue in 8086 microprocessors.
c) Mention the 16-bit registers of 8085 microprocessor.
d) Why the data bus is bi-directional in a microprocessor system.
e) How a keyboard matrix is formed in keyboard interface?
f) What is the purpose of control word written to control register in 8255?
g) What is the special function register in 8051?
h) Mention two power saving mode of operation in 8051.
i) Mention at least two machine cycles of 8085 mpu.
j) What do you mean by memory mapping and I/O mapping?

Part-II

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

a) Explain in brief about different types of addressing modes of 8086 instruction set.
b) Write an ALP to sort the given numbers in ascending order in 8085.
c) With suitable diagram explain the architecture of PPI 8255.
d) What do you mean by vectored interrupts of 8085 microprocessor? Explain the priorities.
e) Describe the data storage scheme in a stack structure of 8051 microcontroller.
f) Give a comparison of minimum mode and maximum mode pins.
g) What is a segment? Explain the segmentation in 8086 and list the advantages of having segmentation.
h) Explain the different serial communication modes in 8051.
i) Write an 8051 ALP to find the average of given N numbers.
j) Explain architecture of 80386 with neat diagram.

k) Write an ALP using 8086 instructions to reverse a four-digit number.

l) With a timing diagram, explain 8085 microprocessor bus activities during a memory write operation.

Part-III

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

Q3 With neat sketch explain how LCDs are interfaced with 8051 Microcontroller. **(16)**

Q4 Draw the schematic for interfacing a stepper motor with 8051 microcontroller and write 8051 ALP for stepper motor control. **(16)**

Q5 Explain the classification of 8085 microprocessor instruction set with examples. Explain how various control signals are generated in 8085 microprocessors, for external operations. **(16)**

Q6 Explain the steps involved in interfacing an alarm controller with 8086 microprocessor and explain details with neat sketch. **(16)**