R18 Regulation *Subject code:* **2O7FA**

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech VII Semester Regular/Supplementary Examinations, November 2022

MICROPROCESSORS AND MICROCONTROLLERS

(Open Elective)

(Information and Technology)

Maximum Marks: 70 Date:07.12.2022 Duration: 3 hours

Note: 1. This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Name the different types of interrupts supported by 8086.
2 Write down the addressing mode of the instruction MOV AX, 55H [BX][SI].
3 Identify the different operand types used in 8051.
4 Find out any two instructions which affect all flags of the 8051 Microcontroller.
5 Write short notes on I2C Bus and SPI Bus.
6 Write about serial data transfer schemes.
7 Discuss the features of ARM Processor.
8 Explain how data processing takes place in an ARM processor.
9 List the applications of the CORTEX processor.
10 Give the difference between OMAP and CORTEX processors.

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Write an 8086-assembly language program to convert BCD data to Binary data. (10)

OR

12 Describe the internal architecture of the 8086 microprocessors with neat diagrams. (10)
13 A. Explain in detail about arithmetic and control instruction set in 8051. (5)
B. Write a program to add any two 16-bit data using 8051. (5)

OR

14 Classify the different addressing modes in 8051 microcontrollers with an example. (10)
15 Discuss how microprocessors are interfaced with I/O and memory in detail. (10)

OR

16 Point out the features and explain External communication interfaces-RS232 and USB (10)
17 Compare Microprocessor, Microcontroller and ARM Processors. (10)

OR

18 Illustrate ARM thumb instructions (10)
19 Explain the CORTEX processor and its architecture (10)

OR

20 Describe the OMAP processor and its architecture. (10)