R18 Regulation *Subject code:* 2P5BC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Regular Examinations, February 2021

MICROPROCESSOR AND MICROCONTROLLERS

(Electrical and Electronics Engineering)

Maximum Marks: 70 Date: 22.02.2021 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.
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 What is an Interrupt? How the interrupts are classified in 8086?
2 What is the significance of timing diagram in 8086?
3 Give the alternate functions for the port pins of port3 in 8051.
4 Explain DJNZ instructions of Intel 8051 microcontroller?
5 Define functions of RS-232.
6 What is baud rate?
7 Define Pipelining.
8 Write an ALP to perform scalar product of three numbers?
9 What is the function of Instruction decode in ARM cortex?
10 List four features of OMAP processor

Part-B

Answer All the following questions. **(10M X 5=50Marks)**

11 Explain the architecture of 8086 processor in detail with neat diagram. (10M)

OR

12 a) Explain the 8086 processor data transfer instruction set in detail. (5M)
b) Explain the 8086 processor Arithmetic instruction set in detail. (5M)

13 Explain the architecture of 8051 Microcontroller in detail with neat diagram. (10M)

OR

14 Explain the 8051 Microcontroller Addressing mode in detail with examples. (10M)

15 Explain how to interface stepper motor with 8086 processor with neat diagram and write an Assembly language program to control the stepper motor. (10M)

OR

16 Explain in detail about SPI bus with neat diagram. (10M)

17 a) Explain in detail about ARM registers. (5M)
b) Explain the various types of thumb instruction set. (5M)

OR

18 a) Discuss in detail about ARM load store instructions. (5M)
b) Discuss in detail about ARM exceptions and interrupts.(5M)

19 Explain in detail about ARM cortex architecture with neat diagram. (10M)

OR

20 Explain in detail about OMAP processor architecture with neat diagram. (10M)