R20 Regulation *Subject code: 3P5DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, April 2026

MICROPROCESSORS AND MICROCONTROLLERS

(ECE)

Maximum Marks: 70 Date: 22.04.2026 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)		Marks	CO	BTL
1	Write the use of Parity Flag in 8086 microprocessor.	2M	1	L1
2	Define Maskable and Non-Mask able Interrupts of 8086 microprocessor.	2M	1	L1
3	Draw Register Banks of RAM in 8051.	2M	2	L1
4	Explain PUSH and POP Instructions in 8051.	2M	2	L1
5	List out the important features of the A/D converter.	2M	3	L1
6	Write about USB.	2M	3	L1
7	Draw the frame format of CPSR.	2M	4	L1
8	List the main features of ARM.	2M	4	L1
9	Classify different types of CORTEX processor.	2M	5	L1
10	Write various advantages of OMAP Processors.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Demonstrate how the Physical memory organization of the 8086 Microprocessor is obtained. b) Apply the concept of physical address generation in the 8086 Given CS=5500H and IP=1200H and calculate the corresponding Physical address.	5M 5M	1	L2
	OR			
12	Explain the Arithmetic and Logical instructions in the 8086 microprocessor with an example.	10M	1	L2
13	Demonstrate the concept of Timers and Counters in 8051 microcontroller.	10M	2	L2
	OR			
14	Discuss Memory Organization of 8051 microcontroller with neat sketch.	10M	2	L2
15	Construct the interfacing of 4X4 Keyboard to detect Key numbers with 8051 microcontroller.	10M	3	L2
	OR			
16	Explain Interfacing of the D to A Converter with 8051 Microcontroller.	10M	3	L2

17	What is the size of ARM Registers? Elaborate in detail the Register set of ARM Processor with diagram.	10M	4	L2
	OR			
18	a) Demonstrate ARM Processor Interrupt Vector Table. b) Contrast LOAD and STORE instructions of ARM.	5M 5M	4	L2
19	Discuss architecture of Cortex processor with a neat sketch.	10M	5	L2
	OR			
20	List out different classifications of OMAP processor and choose any one type and explain in detail.	10M	5	L2