R20 Regulation *Subject code: 3O6FC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, April 2026

MICROPROCESSORS AND MICROCONTROLLERS

(IT)

Maximum Marks: 70 Date: 21.04.2026 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	What are the conditional and control flags of 8086 microprocessor?	2M	1	L1
2	Write the different general purpose registers of 8086 microprocessor.	2M	1	L1
3	List the different features of 8051 microcontroller.	2M	2	L1
4	Write about the various Interrupts supported by 8051 microcontroller.	2M	2	L1
5	List out the important features of the A/D converter.	2M	3	L1
6	Draw the control word format of 8255PPI.	2M	3	L1
7	List out different advanced ARM processors.	2M	4	L1
8	How pipelining is used in ARM processor.	2M	4	L1
9	Outline the features of CORTEX processor.	2M	5	L1
10	Mention various advantages of OMAP Processors.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Explain the register set of 8086 microprocessor. b) Define Memory segmentation and list out the different segments in 8086 microprocessor in detail.	5M 5M	1	L2
	OR			
12	a) Draw and explain the common function signals of 8086 microprocessor. b) List and describe different string manipulation operations of 8086 microprocessor with example.	5M 5M	1	L2
13	Describe RAM memory organization of 8051 microcontroller.	10M	2	L2
	OR			
14	Write short notes on Timers and Counters concept in 8051 microcontroller.	10M	2	L2
15	Draw and explain the architecture of 8255PPI with neat diagram.	10M	3	L2
	OR			
16	Write short notes on Onboard communication interfaces. Explain working of SPI Bus.	10M	3	L2
17	Draw and explain ARM processor architecture.	10M	4	L2

	OR			
18	Explain in detail about Branch Instructions and Software Interrupt Instructions of ARM processor.	10M	4	L2
19	Outline the classification, features and applications of ARM CORTEX processor.	10M	5	L2
	OR			
20	List out different classifications of OMAP processor and explain one type in detail.	10M	5	L2

3.