R20 Regulation *Subject code:3O6FC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

MICROPROCESSORS AND MICROCONTROLLERS

(IT)

Maximum Marks: 70 Date: 23.06.2025 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	Explain the different general-purpose registers of 8086 microprocessor.	2M	1	L1
3	Write the different features of 8051 microcontroller.	2M	2	L1
4	Draw the frame format of PSW.	2M	2	L1
5	Define the terms Simplex, Half Duplex and Full Duplex Communication standards	2M	3	L1
6	What is Asynchronous Serial data Transfer.	2M	3	L1
7	Expand ARM. Write its applications.	2M	4	L1
8	What is the size of Thumb instruction set of ARM Processor? Write features of it.	2M	4	L1
9	What is OMAP and list out its features?	2M	5	L1
10	Write the applications of CORTEX processor.	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 microprocessors 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.	6M 4M	1	L2
13	a) Describe RAM memory organization of 8051 microcontroller. b) Explain various registers of 8051 microcontroller	5M 5M	2	L2
	OR			
14	a) Explain Interrupt Structure of 8051 microcontroller in detail. b) Explain the following SFRs of 8051 Microcontroller in detail: i) TCON ii)IE	5M 5M	2	L2

15	With the help of a neat diagram, show the interfacing of LCD Display with 8051 microcontroller and explain its operation	10M	3	L2
	OR			
16	a) Explain Interfacing of the D to A Converter with 8051 Microcontroller. b) Discuss about I^2C with neat figure.	6M 4M	3	L2
17	a) Explain about the different exceptions in ARM processors. b) Draw and explain the program status registers.	5M 5M	4	L2
	OR			
18	a) Draw ARM architecture and explain it. b) Explain LOAD and STORE instructions of ARM.	5M 5M	4	L2
19	Describe architecture of cortex processor with a neat sketch.	10M	5	L2
	OR			
20	Discuss with a neat sketch the architecture of OMAP Processor.	10M	5	L2