



R20 Regulation *Subject code: 3P50D*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, July 2024

MICROPROCESSORS AND MICROCONTROLLERS
(ECE)

Maximum Marks: 70

Date:26.07.2024 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		CO	Bloom Tx
All the following questions carry equal marks (10X2M=20 Marks)			
1	Classify the registers of 8086 and write their names	1	1
2	Draw the flag register structure of 8086.	1	2
3	Write about the memory organization in 8051 microcontroller?	2	2
4	Draw the SCON register format.	2	2
5	What is the significance of EA pin	3	1
6	What is the need of I2C?	3	2
7	Write features of ARM?	4	2
8	Differentiate between CPSR and SPSR	4	2
9	List the features of Cortex processor.	5	2
10	Write the applications of OMAP?	5	2
Part-B			Bloom Tx level
Answer All the following questions. (5X10M=50Marks)			
11	Explain interrupt structure of 8086 and explain Interrupt Vector Table (IVT) placement in the memory. [10]	1	2
OR			
12	a. Evaluate the physical address, if segment base address is 5200H & offset address is 4510H. [5]	1	5
	b. Demonstrate logical instruction formats of 8086. [5]	1	3
13	a. Draw the IE special function register in 8051 microcontrollers. [5]	2	2
	b. Describe about the timer mode 0 with a neat sketch in 8051 microcontrollers. [5]	2	3
OR			
14	a. Discuss the advantages of microcontroller-based system over microprocessor-based systems. [5]	2	2
	b. Write short notes on interrupts of 8051 microcontroller. [5]	2	2

15	a. Interface Eight 8K RAM chips and Four 8K×4 EPROM chips with 8086 so as to form a completely working system configuration [5]	3	4
	b. List instruction command codes for programming an LCD [5]	3	4
	OR		
16	a. Explain the concept of External Communication Interfaces-RS232 along with diagram. [5]	3	2
	b. Draw and explain the working of UART [5]	3	2
17	How many registers available in ARM and explain them in detail. [10]	4	2
	OR		
18	a. Explain the different Thumb programming model of ARM controller with examples. [5]	4	2
	b. Compare ARM and Thumb instruction. [5]	4	3
19	Explain the architecture of CORTEX processor. [10]	5	2
	OR		
20	Draw the register organization of CORTEX processor [10]	5	1