



R20 Regulation

Subject code:3P5DD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, May 2025

MICROPROCESSORS AND MICROCONTROLLERS
(ECE)

Maximum Marks: 70

Date: 24.06.2025

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	Write the use of Parity Flag in 8086 microprocessor.	2M	1	L1
2	Define Mask able and Non-Mask able Interrupts of 8086 microprocessor.	2M	1	L1
3	Draw Register Banks of RAM in 8051.	2M	2	L1
4	List the serial communication standards.	2M	2	L1
5	Write the control word format of I/O mode of 8255 PPI.	2M	3	L1
6	Write about different types of memories used in microcontrollers.	2M	3	L1
7	List the applications of ARM.	2M	4	L1
8	What is the use of CPSR.	2M	4	L1
9	List out few comparisons of ARM CORTEX and Microcontroller.	2M	5	L1
10	List the applications of OMAP processor.	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	Illustrate 8086 Microprocessor Data Transfer instructions with examples.	10M	1	L2
13	Demonstrate the concept of Timers and Counters in 8051 microcontrollers.	10M	2	L2
OR				
14	Demonstrate the functionalities of various addressing modes supported by 8051 Microcontroller through specific examples.	10M	2	L2
15	Explain various modes of 8255 in detail with neat sketch.	10M	3	L2
OR				

16	Illustrate the role and functionality of external communication interfaces and explain RS-232 in detail.	10M	3	L2
17	Illustrate in detail about Branch Instructions and Software Interrupt Instructions of ARM processor.	10M	4	L2
	OR			
18	With a neat sketch, explain the ARM processor architecture.	10M	4	L2
19	Write the classification, features and applications of ARM CORTEX processor.	10M	5	L2
	OR			
20	Classify the main features of OMAP Processor. Explain the architecture of OMAP Processor.	10M	5	L2