R20 Regulation *Subject code:3P6BD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

MICROPROCESSORS AND MICROCONTROLLERS

(EEE)

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 is the use of Parity Flag in 8086 microprocessor.	2M	1	L1
2	How to calculate the physical address of memory in 8086. Explain with an example.	2M	1	L1
3	Draw TMOD register.	2M	2	L1
4	Categorize Register Banks of RAM in 8051.	2M	2	L1
5	What is need of RS-232?	2M	3	L1
6	Write short notes on RAM and ROM.	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	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	Explain the Architecture of 8086 Microprocessor with a neat sketch.	10M	1	L2
	OR			
12	List and Explain 8086 Microprocessor Data Transfer instructions with examples.	10M	1	L2
13	a) Draw the Pin diagram of 8051 microcontroller and explain each pin in detail. b) Describe Memory Organization of 8051 microcontroller neatly.	5M 5M	2	L2
	OR			
14	a) Write short notes on Timers and Counters concept in 8051 microcontrollers. b) Explain the following SFR'S in detail 1) SCON 2) PCON 3) IP	5M 5M	2	L2
15	a) What is the purpose of UART? Explain it with neat diagram. b) Write short notes on USB external communication interface.	5M 5M	3	L2
	OR			

16	Discuss the interfacing of 4X4 Keyboard to detect Key numbers with 8051 microcontrollers.	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	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