R20 Regulation *Subject code: 3P6BD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, November 2025

MICROPROCESSORS AND MICROCONTROLLERS

(EEE)

Maximum Marks: 70 Date: 13.11.2025 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	List the features of 8086 microprocessor.	2M	1	L1
2	Write about flag manipulation instructions of 8086.	2M	1	L1
3	Write the importance of microcontroller over microprocessor.	2M	2	L1
4	List out different interrupts of 8051 Microcontroller.	2M	2	L1
5	Define BSR mode of 8255.	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	List 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 Physical memory organization of 8086 Microprocessor. b) Discuss about physical address generation in 8086. If CS=5500H and IP=1200H then calculate Physical address.	5M 5M	1	L2
	OR			
12	List and Explain 8086 Microprocessor Arithmetic and Logical instructions with examples.	10M	1	L2
13	Explain different Arithmetic Instructions of 8051 microcontroller with neat examples.	10M	2	L2
	OR			
14	Explain the following SFRs of 8051 Microcontroller in detail: i) TCON ii)IE	5M 5M	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 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