R22 Regulation *Subject code: 4O6GA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Regular Examinations, May 2025

EMBEDDED SYSTEMS DESIGN

(CSE(AI&ML))

Maximum Marks: 60 Date: 27.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 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 (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	What is an embedded system?	1M	1	L1
b)	List the Classification of Embedded System based on Complexity and Performance.	1M	1	L1
c)	Write the applications of PLDs?	1M	2	L2
d)	Write about Brown-out Protection Circuit?	1M	2	L2
e)	Label the Strategic alliances, open source standards and frame works in mobile handset industry	1M	3	L1
f)	List out Bottlenecks in Embedded System.	1M	3	L1
g)	Define process and Thread.	1M	4	L1
h)	Define RTOS.	1M	4	L1
i)	List out the various Processes running on Operaing System.	1M	5	L1
j)	What do you mean by Remote Procedure Call	1M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
2	a) Compare Embedded Systems and General Computing Systems	5M	1	L2
	b) Mention the various applications of an embedded system and explain	5M	1	L1
	OR			
3	What are the Characteristics and explain Quality Attributes of Embedded Systems.	10M	1	L1
4	Explain Embedded Firmware Development Languages.	10M	2	L2
	OR			
5	Explain Oscillator Unit and Real-Time Clock (RTC).	10M	2	L2
6	What are the various Processor Trends in Embedded Systems? Explain.	10M	3	L2
	OR			
7	Explain Onboard Communication Interfaces of Embedded System.	10M	3	L2

8	Discuss about Multiprocessing and Multitasking.	10M	4	L2
	OR			
9	Discuss about Task Scheduling.	10M	4	L2
10	Explain How to Choose an RTOS.	10M	5	L2
	OR			
11	Explain Task Communication/Synchronization Issues.	10M	5	L2