R20 Regulation *Subject code:3O6DA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

EMBEDDED SYSTEMS

(CSE(DS))

Maximum Marks: 70 Date: 25.06.2025 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	Define an Embedded System. Give examples?	2M	1	L1
2	Classify the embedded systems?	2M	1	L1
3	Describe the components used as the core of an embedded system?	2M	2	L1
4	Compare RISC & CISC processors?	2M	2	L1
5	Define on-board communication.	2M	3	L1
6	Write a short note on Open Standards in Embedded industry	2M	3	L1
7	What is an Operating system? What are its Primary functions?	2M	4	L1
8	What is task control block (TCB)?	2M	4	L1
9	What is Inter Process Communication?	2M	5	L1
10	What is Task Synchronization?	2M	5	L1
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	What is an embedded system? Distinguish between General purpose computing systems and embedded systems?	10M	1	L2
	OR			
12	What is the operational quality attribute? Explain the important operational quality attributes to be considered in any embedded system design..	10M	1	L2
13	What is embedded firmware? What are the different approaches available for embedded firmware development?	10M	2	L2
	OR			
14	Write short notes on Reset circuit, brown out protection circuit & watchdog timer.	10M	2	L2
15	Explain the sequence of operation for communicating with SPI bus device with neat diagram.	10M	3	L2
	OR			
16	Describe the processor trends in embedded system.	10M	3	L2
17	Explain task communication in detail.	10M	4	L2

	OR			
18	Explain task synchronization technique.	10M	4	L2
19	What is deadlock and examine the conditions favoring deadlock?	10M	5	L2
	OR			
20	Explain the message passing technique for IPC. What arethe merits and demerits of message-based IPC?	10M	5	L2