



R20 Regulation

Subject code:306DA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, December 2024

EMBEDDED SYSTEMS (CSE (DS))

Maximum Marks: 70

Date:07.01.2025

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 which carries 10M.
 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)		CO	Bloom Tx
1	Define an Embedded System. Give examples?	1	L1
2	Classify embedded systems?	1	L2
3	Describe the components used as the core of an embedded system?	2	L1
4	Compare RISC & CISC processors?	2	L1
5	Define on-board communication.	3	L1
6	Write a short note on Open Standards in Embedded industry	3	L1
7	What is an Operating system? What are its Primary functions?	4	L1
8	What is task control block (TCB)?	4	L1
9	What is starving condition.	5	L1
10	How multiple threads of a process co-operate?	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
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	Explain the components of typical embedded systems in detail with neat diagram? [10M]	2	L2
	OR		
14	Write short notes on Reset circuit, brown out protection circuit & watchdog timer. [10M]	2	L2
15	Explain OS trends in embedded systems. [10M]	3	L2
	OR		
16	Explain IEEE 1394 and USB communication interface. [10M]	3	L2

17	What is process control block (PCB)? Explain the structure of the PCB. [10M]	4	L2
	OR		
18	Analyze different types of preemptive scheduling algorithms. State merits and demerits of each. [10M]	4	L2
19	Explain producer – consumer problem in the inter process communication context. [10M]	5	L2
	OR		
20	What is semaphore? Analyze the different types of semaphores. Where it is used? [10M]	5	L2