R20 Regulation *Subject code:3E7DC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Regular/Supplementary Examinations, December 2024

EMBEDDED SYSTEM DESIGN

(ECE)

Maximum Marks: 70 Date:04.01.2025 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.

	All the following questions carry equal marks (10X2M=20 Marks)	**CO**	**Bloom Tx**
1	Define embedded system.	CO1	L1
2	What are the applications of an embedded system?	CO1	L1
3	Write the two differences between Microcontroller and Microprocessor.	CO1	L2
4	List any two Commercial Off-The-Shelf Components.	CO3	L1
5	Draw UART Communication Interface.	CO1	L2
6	List any four External Communication Interfaces used in embedded system.	CO3	L3
7	Write draw backs of ISP.	CO1	L2
8	Write the significance of Mixing Assembly and High Level Language in ESD.	CO2	L3
9	Write the need for EDLC?	CO3	L4
10	Write the any two Objectives of EDLC.	CO2	L2
	Answer All the following questions.**(5X10M=50Marks)**	**CO**	**Bloom Tx**
11	A. Write difference between embedded system and general computing system. [5M] B. Discuss the operational Quality Attributes of Embedded Systems. [5M]	CO3 CO2	L3 L2
	OR		
12	A. Write classification of embedded systems and explain in detail. [5M] B. List and describe five different application areas under which embedded systems commonly fall? Provide examples of 2 devices in each application. [5M]	CO1 CO3	L3 L3
13	A. What is Watchdog timer and explain the significance of it in micro controller. [5M] B. Explain the role of Real Time Clock in embedded system [5M]	CO2 CO3	L3 L3
	OR		
14	A. Discuss in detail about the functionality of RESET circuit in embedded system [5M] B. Explain in detail about memory shadowing with its advantages[5M]	CO2 CO2	L3 L2

15	A. Draw and explain I2C bus frame format. [5M] B. Explain the electrical specifications of RS232C. [5M]	CO2 CO2	L3 L3
	OR		
16	A. Discuss about IEEE 1394 Communication Interface. [5M] B. Explain the 7-Segment LED Display with neat diagram. [5M]	CO3 CO2	L2 L3
17	A. Distinguish the Two Embedded Firmware Development Languages with example. [5M] B. Discuss The Super Loop based Approach for Embedded Firmware Design. [5M]	CO3 CO2	L2 L2
	OR		
18	Examine the Use of Factory Programmed Chip and Firmware Loading for Operating System based Devices [10M]	CO3	L3
19	Explain the Different Phases of EDLC and EDLC Approaches in ESD.[10M]	CO3	L3
	OR		
20	Write a note on Battery-Operated Smart Card Reader with necessary block diagram. [10M]	CO3	L3