



R20 Regulation

Subject code:3E7DC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, November 2025

EMBEDDED SYSTEM DESIGN

(ECE)

Maximum Marks: 70

Date: 01.12.2025

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	Distinguish between General purpose computing systems and embedded systems?	2M	1	L1
2	List the characteristics of 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	Write about USB.	2M	3	L1
6	Write a short note on RS232C interface?	2M	3	L1
7	Write the limitations of the high-level language based development?	2M	4	L1
8	What is out-of-circuit programming?	2M	4	L1
9	Explain the various activities performed during the design phase of an Embedded product development.	2M	5	L1
10	List the drawbacks of Linear model for embedded product development.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Classify embedded systems with examples.	10M	1	L2
OR				
12	What is an embedded system? Explain different application areas of embedded systems?	10M	1	L2
13	Explain the components of typical embedded systems in detail with neat diagram?	10M	2	L2
OR				
14	Demonstrate the role of Watch dog Timer & Brown out protection circuit in embedded system with neat diagrams.	10M	2	L2
15	Illustrate the working of stepper motor with neat diagrams.	10M	3	L2
OR				
16	Discuss different on-board communication interfaces.	10M	3	L2
17	What is the need of an embedded firmware? Briefly explain the embedded firmware development languages.	10M	4	L2
OR				

18	Compare & Contrast In System Programming (ISP) and In Application Programming (IAP).	10M	4	L2
19	Illustrate the different phases of Embedded Product Development Life Cycle (EDLC) with neat diagram.	10M	5	L2
OR				
20	Discuss in detail about Iterative/ Incremental or Fountain model and Spiral Model.	10M	5	L2