



*R18 Regulation* *Subject code: 208FB*  
**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**  
(Autonomous, Accredited by NAAC with 'A' Grade)

**B.Tech VIII Semester Regular Examinations, April 2023**

## **Embedded Systems**

(Open Elective)

(Information Technology)

*Maximum Marks: 70*

Date:05.05.2023 Duration: 3 hours

### Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Classify the embedded systems.
- 2 List the benefits of embedded systems.
- 3 Mention the components used as the core of an embedded system.
- 4 Define Watch Dog Timer.
- 5 What are the problems faced by the embedded devices industry?
- 6 State the special features of Wi-Fi.
- 7 Give the basic functions of a Real Time kernel.
- 8 List the advantages of Threads.
- 9 Define message passing.
- 10 What is a device driver?

### Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain about the major application areas of embedded systems. (10M)  
OR
- 12 List out and explain various operational and non-operational quality attributes of embedded system. (10M)
- 13 What is the difference between microprocessor and microcontroller? Explain the role of microprocessors and micro controllers in embedded systems. (10M)  
OR
- 14 What is an embedded firmware? Discuss the different approaches available for embedded firmware development. (10M)
- 15 Discuss in detail about Processor trends in embedded systems. (10M)  
OR
- 16 Describe the working of I2C Protocol with neat diagram. (10M)
- 17 Explain how Threads and process are related. What are common to process and threads? (10M)  
OR
- 18 Explain the different multitasking models in the operating system context. (10M)
- 19 Discuss in detail about the following: (a) Remote Procedure Call (5M) (b) Sockets (5M)  
OR
- 20 Explain the different functional and non-functional requirements that needs to be evaluated in the selection of RTOS. (10M)