



R20 Regulation

Subject code:307GA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, April 2024

EMBEDDED SYSTEM DESIGN

(CSE(AIML))

Maximum Marks: 70

Date:27.04.2024 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)

- 1 What are the various purposes of embedded systems?
- 2 Write the disadvantages of embedded system.
- 3 Write any two operational quality attributes in embedded system design?
- 4 Differentiate little-endian & big-endian processors.
- 5 What is I/O subsystem write examples?
- 6 Write a short note on Open Standards in Embedded industry
- 7 What are the basic functions of Real time kernel?
- 8 Define process control block?
- 9 What is priority ceiling ?
- 10 What is live lock ?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 What is the non-operational quality attribute? Explain the important non-operational quality attributes to be considered in any embedded system? [10]
- OR
- 12 Explain the purpose of embedded systems in detail with illustrative examples? [10]
 - 13 Write short notes on DSP & ASIC. [10]
- OR
- 14 Explain the components of typical embedded systems in detail with neat diagram. [10]
 - 15 Explain the sequence of operation for communicating with SPI bus device with neat diagram. [10]
- OR
- 16 Explain communication interface in detail. [10]
 - 17 Explain the sequence of operation for communicating with an I2C bus device with neat diagram. [10]

OR

- 18 Explain different types of non-preemptive scheduling algorithms. State merits and demerits of each. [10].
- 19 What is Inter Process Communication (IPC)? Give an overview of different IPC mechanisms adopted by various operating systems?

OR

- 20 Explain dining philosophers' problem in the process synchronization context.