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| ***Regulation R-18 Subject code: B48PE3***  TKR COLLEGE OF ENGINEERING AND TECHNOLOGY  (Autonomous, Accredited by NAAC with ‘A’ Grade)  ***C:\Users\india\Desktop\tkrcet-logo.jpg*** **B.Tech IV-II Semester Regular Examinations, June 2022**    **ECE**  **EMBEDDED SYSTEMS (set-1)**  ***Maximum Marks: 70*** 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 | | Distinguish between General purpose computing systems and embedded systems? | |
| 2 | | Classify the embedded systems? | |
| 3 | | Describe the components used as the core of an embedded system? | |
| 4 | | Differentiate microprocessor & microcontroller? | |
| 5 | | Discuss about RS232C interface? | |
| 6 | | Discuss the bottlenecks in embedded industry. | |
| 7 | | Discuss about kernel space and user space. | |
| 8 | | What is process life cycle? | |
| 9 | | What is starvation. | |
| 10 | | Define task synchronization? | |
| Part-B | | | |
| Answer All the following questions. **(10MX 5=50Marks)** | | | |
| 11 | What is the operational quality attribute? Explain the important operational quality attributes to be considered in any embedded system design? | | |
|  | OR | | |
| 12 | What is an embedded system? Distinguish between General purpose computing systems and embedded systems? | | |
| 13 | Explain about ASIC, ASSP & COTS in detail? | | |
|  | OR | | |
| 14 | What is embedded firmware? What are the different approaches available for embedded firmware development? | | |
| 15 | Explain about Cloud Computing and Internet of Things. | | |
|  | OR | | |
| 16 | Explain the sequence of operation for communicating with an I2C bus device with neat diagram. | | |
| 17 | Explain different types of non-preemptive scheduling algorithms. State merits and demerits of each. | | |
|  | OR | | |
| 18 | Define Operating System and what are the important functions of OS? | | |
| 19 | What is semaphore? Explain the different types of semaphores. Where it is used? | | |
|  | OR | | |
| 20 | Explain producer – consumer problem in the inter process communication context. | | |

Note: 1.Set the question paper as per Syllabus mentioned

2. Descriptive each question carries 10 marks and may have a,b,c,d or i,ii,iii,iv as sub questions.

1. Please indicate the weightage of marks