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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-2)**  ***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 | | Define an Embedded System. Give examples? | |
| 2 | | Write the advantages of embedded system. | |
| 3 | | What are the languages used in embedded system? | |
| 4 | | Compare RISC & CISC processors? | |
| 5 | | What is cross compiler? | |
| 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. **(10MX 5=50Marks)** | | | |
| 11 | What is the non-operational quality attribute? Explain the important non-operational quality attributes to be considered in any embedded system? | | |
|  | OR | | |
| 12 | Explain the purpose of embedded systems in detail with illustrative examples? | | |
| 13 | Write short notes on DSP & ASIC. | | |
|  | OR | | |
| 14 | Explain the components of typical embedded systems in detail with neat diagram? | | |
| 15 | Explain the sequence of operation for communicating with SPI bus device with neat diagram | | |
|  | OR | | |
| 16 | Explain in detail the working of USB with neat diagram? | | |
| 17 | Explain the Process life cycle in detail with neat diagram? | | |
|  | OR | | |
| 18 | Three process with process IDs P1,P2,P3 with estimated completion time 5,10,7 milliseconds respectively enters the ready queue together in the order of P1,P2,P3. Process P4 with estimated execution completion time 2 millisecond enters the ready queue after 5 milliseconds. Calculate waiting time and Turn Around Time (TAT) for each process and the average waiting time and TAT in the FIFO scheduling. | | |
| 19 | What is mutual exclusion in the process synchronization context? Explain the different mechanisms for mutual exclusion? | | |
|  | OR | | |
| 20 | Explain Race Condition in detail, in relation to shared resource access. | | |

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