

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination, Dec 2021
B. Tech. in EEE Engineering, Semester V

Roll No.....

EE 1214

Real Time Operating System

Time: 1.5 hours

Max. Marks: 30

OPEN BOOK

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/flow chart wherever, required are an integral part of the answer.
4. Use of TextBook or handwritten notes are allowed. However, sharing of these resources with other students is not permitted.
5. All questions are compulsory

Total Pages: 02

Q1. Draw schematic diagram for interfacing 32K RAM to a microprocessor, showing the address bus width and control signals. [LO: EE1214.1] 5 M

Q3. Partition the RAM in Q1 into 4 K blocks and map four blocks of processor 1, process 2, process 3, each block of 1 KB size. Show the schematic for Process page table with presence bit marked for blocks. If some of the blocks from process 1 need to be swapped with process 4 from the hard disk, how can this be done? [LO: EE1214.1] 5M

Q4. Using Earliest Deadline First Algorithm, schedule the tasks as showing in table I below. What are advantages of EDF over LST algorithm. [LO: EE1212.2] 5M

Table I Task parameters for scheduling algorithm

	CT	PT
T1	1	4
T2	2	6
T3	2	8

Q4. Write a C program to generate Timer interrupt at every $1/32$ seconds and blink a LED on MSP430. **[LO:EE 1214.4] 10M**

Q5. Why is a scheduler required in operating system? What are the features of a real time scheduler? Explain using code or pseudocode how structures in C can be used for developing scheduler? **[LO:EE 1214.3] 5M**