Semester IV (B. Tech)

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Academic Year: 2021-22

Jaypee University of Engineering & Technology, Guna

T-2 (Even Semester 2022)

18B11CI413 – OPERATING SYSTEMS

Maximum Duration: 1 Hour 30 Minutes

Maximum Marks: 25

Notes:

1. This question paper has five questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).

		Marks
Q1.	Consider a system implementing multilevel queue scheduling. What strategy can a computer user employ to maximize the amount of CPU time allocated to the user's process?	**[05]**
Q2.	Assuming a 1-KB page size, what are the page numbers and offsets for the following address references (provided as decimal numbers). **(a)** 3085 **(b)** 42095 **(c)** 215201 **(d)** 650000 **(e)** 2000001	**[05]**
Q3.	Given five memory partitions of 400KB, 200KB, 450KB, 350KB and 550 KB (in order), how would the first fit, best fit and next fit algorithms place processes request of 317KB, 194 KB, 217KB and 440 KB (in order)?	**[05]**
Q4.	Consider a paging hardware with a TLB. Assume that the entire page table and all the pages are in the physical memory. It takes 10 milliseconds to search the TLB and 80 milliseconds to access the physical memory. If the TLB hit ratio is 0.6, Calculate the effective memory access time.	**[05]**

Q5. Consider the logical address memory of size 32KB using a page size of 8 KB and a physical memory of 64KB. A page table entry along with base address is given in the table below. Calculate the Physical address for 26KB virtual address. **[05]**

Table: Page Table Entry

Page Number	Base
0	1
1	4
2	3
3	7