

No. of Pages: 2

B

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER M.TECH DEGREE EXAMINATION, APRIL/MAY 2018

Branch: Computer Science and Engineering

Stream: Computer Science and Engineering

Course Code & Course Name

01CS6104 Operating System Design

Answer any two full questions from each part.

Limit answers to the required points.

Max. Marks: 60

Duration: 3 hours

PART A

- | | | | |
|----|----|--|---|
| 1. | a. | Explain real time scheduling policies. | 2 |
| | b. | Explain system call handler in Linux. Explain how the system call handler is invoked and a system call is executed. | 3 |
| | c. | Write notes on writing an interrupt handler. | 4 |
| 2. | a. | Write notes on Copy-on-write. | 3 |
| | b. | Briefly explain Fair scheduling in Linux. | 3 |
| | c. | You have three choices for bottom half: softirqs, tasklets, and work queues, discuss the situation where each will be most appropriate. | 3 |
| 3. | a. | Consider a scenario with two runnable tasks: a text editor and a video encoder. Analyze the scheduling policy in action. | 3 |
| | b. | Explain the significance of bottom half mechanism. In interrupt processing, if the deferred work need to run in interrupt context and should guarantee that no two of same type can run concurrently, which bottom half can be preferred. Write notes on its implementation and usage. | 6 |

PART B

- | | | | |
|----|----|---|-----|
| 4. | a. | Explain zones in Linux memory management. | 3 |
| | b. | Write notes on super block objects. | 3 |
| | c. | Describe BKL in kernel synchronization. | 4.5 |
| 5. | a. | Write short notes on jiffies | 4.5 |

- | | | | |
|----|---|---|-----|
| b. | If your code needs to sleep, which is often the case when synchronizing with user-space which synchronization method is most suitable? Explain. | 6 | |
| 6. | a. | Write notes on contention and scalability | 3 |
| | b. | Explain slab layer design. | 4 |
| | c. | Explain preemption disabling technique | 3.5 |

PART C

- | | | | |
|----|----|--|-----|
| 7. | a. | Briefly explain distributed snapshot algorithm with suitable example. | 6 |
| | b. | Explain data alignment. What are the measures to avoid alignment issues? | 4.5 |
| 8. | a. | Write notes on clusters. Explain its benefits and issues. | 5 |
| | b. | How structure padding is done for aligning data. | 3 |
| | c. | Explain Noop I/O scheduler | 2.5 |
| 9. | a. | What are the jobs of an I/O scheduler? Write about Linus Elevator | 4 |
| | b. | Write about the features of bio structure. | 3.5 |
| | c. | Write about the role of middleware in client/server architecture. | 3 |

http://www.ktuonline.com

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से