Question No : 21 of 26 Marks: 2 (Budgeted Time 4 Min)

Preemptive Shortest Job First scheduling algorithm is best algorithm for minimizing the waiting time for the processes. How can you calculate the average waiting time in preemptive Shortest Job First scheduling algorithm?

Answer (Please click here to Add Answer)

100%

Normal Arial 12

Question No : 22 of 26 Marks: 2 (Budgeted Time 4 Min)

Critical section has hardware based or software based solutions. You have to write the structure of the software based solution for the critical section problem.

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Marks: 3 (Budgeted Time 6 Min)

Consider this algorithm for mutual exclusion.

Process 1{ while true { while (turn == 1) ; /* do nothing */	Process 2 { while true { while (turn == 2) ; /* do nothing */

Answer (Please click here to Add Answer)

Normal Arial 12 100%

; /* do nothing */ *critical section* turn = 2; *other non-critical code* } }	; /* do nothing */ *critical section* turn = 1; *other non-critical code* } }

Answer (Please click here to Add Answer)

Normal Arial 12 100%

```
    other non-critical code
  }
}
```

```
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  }
}
```

Does this solution have any problem? If yes then justify your answer.

Answer (Please click here to Add Answer)

100%

Normal Arial 12

Question No : 24 of 26 Marks: 3 (Budgeted Time 6 Min)

Process can run either as background process or as foreground process. If the process is running in background and you wanted to move a background process into foreground in a UNIX/LINUX shell. Which command will you use for it?

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Question No : 25 of 26 Marks: 5 (Budgeted Time 10 Min)

Semaphore is a variable or abstract data type that provides a simple but useful abstraction for controlling access by multiple processes to a common resource in a parallel environment. We can use semaphores to deal with the n-process critical section problem. You have to explain the working of Semaphore Algorithm.

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Question No : 26 of 26 Marks: 5 (Budgeted Time 10 Min)

Considering the resource sharing feature of threads, what do you think is 'resource sharing' an advantage of a thread or disadvantage of a thread. State your answer briefly with strong argument.

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Virtual University Overseas Examination System V2.0 (x64)

Operating Systems (CS604)

Question: 21 (Marks: 2) Attempted Questions: 25 Total Questions: 26

Let us consider a situation in which each process gets a small unit of CPU time, called *time slice* or *quantum*, which is usually 10-100 milliseconds. After this time has elapsed, the process is preempted and added to the end of the ready queue. Which scheduling algorithm is best suited for above situation?

Answer:

TIME LEFT

16

Virtual University Overseas Examination System V2.0 (x64)

Operating Systems (CS604)

Question: 22 (Marks: 2) Attempted Questions: 25 Total Questions: 26

Process can run either as background process or as foreground process. If there is a process which is in the suspended state and working in background, you wanted to display the status of suspended and background process in a UNIX/LINUX shell. Which command will you use?

Answer:

Moving a process into foreground: fg [%job_id]
where, job_id is the job ID (not process ID) of the suspended or background process. If %job_id is omitted, the current job is assumed.
Moving a process into background: bg [%job_id]
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16

Virtual University Overseas Examination System V2.0 (x64)

Operating Systems (CS604)

Question: 23 (Marks: 3) Attempted Questions: 25 Total Questions: 26

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TIME LEFT

16

What is the function of following command in Linux/ Unix:

a) command ls> abc.txt

b) cat < fileName.txt

Answer:

Answer: (a) command ls > abc.txt :
Without an argument of ls commands it assumes your current working directory.So if we run the ls command right after login, it will displays names of files and directories in our home directory.
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Operating Systems (CS604)

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There are five processes given below with their run time units. Assume that all processes arrive in numerical order at time 0 then answer the questions given below:

Process ID	CPU Requirements
P_1	5
P_2	4
P_3	2
P_4	1
P_5	8

Show the scheduling order for these processes under first-come-first-served, shortest-job first, and round-robin scheduling (quantum = 2).

Answer:

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Normal Arial 12

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Normal Arial 12

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```
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Question No : 21 of 26 Marks: 2 (Budgeted Time 4 Min)

A number of queues can be used in the Multi Level Queue and Multilevel Feedback Queue. You need to identify any three queues that you can use in a Multilevel Feedback Queue.

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Question No : 22 of 26 Marks: 2 (Budgeted Time 4 Min)

Which term is best suited for a process that is a background system process and that provide you some service.

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Marks: 3 (Budgeted Time 6 Min)

Sort out the given below Scheduling algorithms with respect to there best utilization of CPU (arrange in order low to high).

0. First In First Out
1. Priority based scheduling
2. Multilevel Queue scheduling

Answer (Please click here to Add Answer)

Normal Arial 12 100%

 Marks: 3 (Budgeted Time 6 Min)

Which term is best suited for the situation where several processes access and manipulate shared data concurrently, the final value of the data depends on which process finishes last?

Answer (Please click here to Add Answer)

Normal Arial 12 100%

Question No : 25 of 26 Marks: 5 (Budgeted Time 10 Min)

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Normal Arial 12

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Normal Arial 12 100%

Question: 21 (Marks: 2)

Write the code to create a thread, take thread ID in thread named as newThread and run Mythread function.

Question: 22 (Marks: 2) Attem

A CPU scheduler has different evaluation matrices and average waiting time is one of them. State how **Waiting time** relates to the evaluation of matrices with respect to CPU Scheduling?

Operating Systems (CS604)

Question: 23 (Marks: 3)

The mknod() system call may fail due to different reasons. You are required to identify at least three failure scenarios in which mknod() system call fails to execute.

Answer:

Some of the scenarios are :

When the file with given name is exists

Operating Systems (CS604)

Question: 24 (Marks: 3)

What will happen if exit () is called instead of pthread_exit () in multithreaded system?

Answer:

Virtual University Overseas Examination System V2.0 (x64)

Operating Systems (CS604)

Question: 25 (Marks: 5)

While processing a job it is possible that each process is executed and managed independently but sometimes it gives overhead to OS. Highlight the issues that can come across while managing a process independently and how the threads can help to overcome these issues? Write at least three aspects used by thread to overcome these issues.

Operating Systems (CS604)

Question: 26 (Marks: 5)

Consider performance of FCFS algorithm for three computer-bound processes. If process Pl takes 24 seconds, P2 takes 3 seconds and P3 takes 3 seconds and processes arrive in the given order P1, P2, P3. You need to calculate the following:

a) Turnaround Time per process.
b) Average Turnaround time of processes