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Questions

Question 1(a)   **(1 mark)**

Is multiprocessor system necessary for achieving concurrency? Explain your answer in one sentence.

ANSWER TO QUESTION 1 A

Status

You have completed this assignment. Review your grade and your assessment details.

▸   Your Response due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

Staff Grade ✔ COMPLETE

▾ Your Grade: 0 out of 1

The question for this section

Answer to question 1 a

Your Response

> it is necessary because multiprocessor load more than one process in main memory which are
> ready to execute
> so for achieving concurrency more than one process needed because multiprocessor can
> make them ready

Assessments of Your Response

▼ Result   0 / 1   POINTS

- STAFF GRADE - 0 POINTS

 False ⓘ

<u>Question 1(b)</u>   **(1 mark)**

Name two UNIX system call.

ANSWER TO QUESTION 1 B

Status

<u>You have completed this assignment. Review your grade and your assessment details.</u>

▸ | **Your Response** due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

 | **Staff Grade** ✔ COMPLETE

▼ Your Grade: 1 out of 1

The question for this section

Answer to question 1 b

Your Response

1.fork()
2.exec()

Assessments of Your Response

▼ Result   1 / 1   POINTS

- STAFF GRADE - 1 POINT

True ℹ

Question 1(c)   **(1 mark)**

Why Shared memory model provides faster communication than message passing model?

ANSWER TO QUESTION 1 C

Status

You have completed this assignment. Review your grade and your assessment details.

▸   **Your Response** due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

Staff Grade ✔ COMPLETE

▾ Your Grade: 1 out of 1

The question for this section

Answer to question 1 c

Your Response

Shared memory model is like public; all process can look into this portion of memory anytime and any process can put data into this space .
This technique is better than message passing model in terms of time management . It takes less time and effort for the processes to get data and store data in the shared memory because it does not need any kernel intervention on it to use any system calls like message passing model , so it is faster

Assessments of Your Response

▼ Result   1 / 1 POINTS

• STAFF GRADE - 1 POINT
  True ℹ️

<u>Question 1(d)</u>   **(1 mark)**

With whom a thread may share its data?

ANSWER TO QUESTION 1 D

Status

<u>You have completed this assignment. Review your grade and your assessment details.</u>

▸ | Your Response due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

| Staff Grade ✔ COMPLETE

▼ Your Grade: 1 out of 1

The question for this section

> Answer to question 1 d

Your Response

a thread may share it's data within the same address space(with other threads)

Assessments of Your Response

▼ Result   1 / 1   POINTS

- STAFF GRADE - 1 POINT

True ℹ️

<u>Question 1(e)</u>   **(1 mark)**

Why Multilevel Feedback Queue scheduling is useful?

ANSWER TO QUESTION 1 E

Status

<u>You have completed this assignment. Review your grade and your assessment details.</u>

▸   **Your Response** due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔️ COMPLETE

   Staff Grade ✔️ COMPLETE

▾ Your Grade: 1 out of 1

The question for this section

Answer to question 1 e

Your Response

Multilevel Feedback Queue scheduling is useful because it can change cpu scheduling algorithms when its needed .so that it takes less time

Assessments of Your Response

▼ Result

1 / 1 POINTS

- STAFF GRADE - 1 POINT

True ℹ

Question 2   **(5 marks)**

What is time-sharing? How time-sharing improves on multiprogrammed OS? Write down the requirements and response time of a time-sharing system. Does a time-sharing system need multi-processors?

ANSWER TO QUESTION 2

Status

You have completed this assignment. Review your grade and your assessment details.

▸ | Your Response due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

| Staff Grade ✔ COMPLETE

▼ Your Grade: 5 out of 5

The question for this section

> Answer to question 2

Your Response

> 1.time-sharing means switch jobs frequently that user can interact of with each job while its running
> 2.time-sharing improves on multi-programmed OS as many users can share the computer simultaneously and multiple program can share cpu by using the idea of time-sharing and gives quick response
> 3.requirements: an interactive (or hand-on) computer system which can directly communicate between user and system
> response time of a time-sharing system< 1 second
> 4.multi-processors run on multiple CPUs where time-sharing can works non single CPU. so not needed

Assessments of Your Response

▼ Result   5 / 5   POINTS

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- STAFF GRADE - 5 POINTS
  Excellent

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Question 3(a)   (5 marks)

Type the differences between a program, a process and a thread.

ANSWER TO QUESTION 3 A

Status

You have completed this assignment. Review your grade and your assessment details.

▸   **Your Response** due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

Staff Grade ✔ COMPLETE

▾ **Your Grade: 5 out of 5**

The question for this section

> Answer to question 3a

Your Response

1.a process is a program that is in execution and program code is known as text section of a process,thread is an execution unit that is part of a process.
2.process is an active entity, program is a passive entity, in thread model object is passive entity
3.The process is heavy_weight,threads are lightweight
4,process does not share its data where threads share its data with each other
5. process needs more time to terminate,on other hand thread needs less time to terminate

Assessments of Your Response

▾ Result   5 / 5 POINTS

- STAFF GRADE - 5 POINTS
  Excellent

Question 3(b)   **(5 marks)**

Which one is more important for a system: Short term scheduler or long-term scheduler? Provide proper explanation.

ANSWER TO QUESTION 3 B

Status

You have completed this assignment. Review your grade and your assessment details.

> ▸ | Your Response due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

> Staff Grade ✔ COMPLETE

▾ Your Grade: 4 out of 5

The question for this section

> Answer to question 3 b

Your Response

Short term scheduler -means schedule which process when loads from main memory to processor
long-term scheduler- means schedule which process when loads from secondary memory to main memory

Short term scheduler executes more frequently than long-term scheduler. Until a process leaves a main memory this long time scheduler does not have to work.
i think both type of schedulers are important equally because if we want to process a program both are need. But Short term scheduler use more frequently , if we think in terms of uses then Short term scheduler is more important
one thing to note Short term scheduler can not be happen if where is no long term scheduler

Assessments of Your Response

▾ Result   4 / 5 POINTS

- STAFF GRADE - 4 POINTS
  Good

Question 4 (a)　　　　**3 marks**

Map multiprocessing and multi-tasking with concurrency and parallelism. Explain with simple example.

ANSWER TO QUESTION 4 A

Status

You have completed this assignment. Review your grade and your assessment details.

▸ ｜　　Your Response due Jan 1, 2029 06:00 +06 (in 8 years, 2 months) ✔ COMPLETE

｜　Staff Grade ✔ COMPLETE

▾ Your Grade: 2 out of 3

The question for this section

> Answer to question 4 a

Your Response

multiprocessor load more than one process in main memory which are ready to execute
multi-tasking is multiprogramming with time sharing
suppose we have p1 p2 p3 p4 p5
parallelism means we can divide them into two part (p1 p2 p3) (p4 p5)
in parallelism p1 p2 p3 will not make any context swiching with p4 p5
in concurrency p1 p2 p3 p4 p5 will share the cpu among them by using time_sharing

Assessments of Your Response

▼ Result   2 / 3 POINTS

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- STAFF GRADE - 2 POINTS
  Fair

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4 b

2.0/2.0 points (graded)
Consider the following scenario

Let A process with **292** lines of parallel code and **229** lines of sequential code.
If you increase the number of processors from 1 to **17**.

What can be the maximum speedup for your system according to the Amdhal's law?

Write your answer upto 2 decimal points (i.e. 1.02, 2.99)

| 2.12 | ✔ |

Submit   You have used 1 of 1 attempt

5a

2.5/5.0 points (graded)
Consider the information of following five processes -

Process	Arrival time	Burst time
P1	0	5
P2	2	3
P3	7	2
P4	7	3
P5	9	9

Calculate the avarage watiting time and avarage turnaround time for a **Round Robin** scheduling algorithm with time Quantime **q=4**

Insert Avarage Turnaround time (only integer value, no decilam points. For example if your ans is 26.5 , insert 26 only)

| 6 | ❌ **Answer:** 7.5

Insert Avarage waiting time (only integer value, no decilam points. For example if your ans is 26.5 , insert 26 only)

| 2 | ✔ **Answer:** 2.5

| Submit | You have used 1 of 1 attempt

ⓘ   Answers are displayed within the problem

5b

5.0/5.0 points (graded)
Consider the information of following five processes -

Process	Arrival time	Burst time
P1	0	5
P2	2	8
P3	5	3
P4	3	7
P5	5	1

Calculate the avarage watiting time and avarage turnaround time for a **Preemtive Shortest Job First(SRTF or SRJF)** scheduling.

Insert Avarage Turnaround time (only integer value, no decilam points. For example if your ans is 26.5 , insert 26 only)

9   ✔

Insert Avarage Waiting time (only integer value, no decilam points. For example if your ans is 26.5 , insert 26 only)

4   ✔

Submit   You have used 1 of 1 attempt

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