

## Course outline

How does an NPTEL online course work?

Week 0

☐ Quiz: Assignment 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Assignments Solution

Download Videos

Live Interactive Session

# Assignment 0

The due date for submitting this assignment has passed.

**Due on 2021-07-26, 23:59 IST.**

As per our records you have not submitted this assignment.

- 1) In an operating system, semaphore is used for:
- Preventing deadlocks
  - Supporting mutual exclusion
  - Preventing processes from corrupting each other's address space
  - Supporting virtual memory

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
b.

- 2) The interval between the ready time and completion of the job is called which one of the following?
- Turnaround time
  - Throughput
  - Response time
  - Waiting time

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
c.

- 3) The operating system of a computer is essentially a:
- A graphical user interface
  - A device driver
  - Software that executes user programs instruction by instruction
  - Resource manager

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
d.

- 4) Consider an operating system running multiple processes having exclusive resource requirements from a set of resource classes. Further assume that there is exactly one resource in each resource class. Then, a directed cycle in the resource allocation graph would indicate which one of the following?
- A deadlock might occur in the future
  - All processes are deadlocked
  - Some processes are deadlocked
  - The system is safe from deadlock

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
c.

- 5) Which one of the following statements correctly characterizes a critical section?
- A part of the operating system that cannot be accessed by user processes
  - A segment of instructions of a process that accesses some resource that is modifiable by other processes
  - A contiguous part of memory to which only one process can write at any time
  - A contiguous part of memory which can be read by one process at a time

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
b.

- 6) Which of the following is NOT a valid deadlock prevention scheme?
- Processes release all resources before requesting a new resource
  - The resources are numbered uniquely and a process never requests a lower numbered resource than the last one it requested.
  - Processes never request a resource after releasing any resource
  - All processes request all required resources upfront and start execution only after grant of the requested resources.

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
c.

- 7) Which one of the following is true about interrupts?
- These are generated when memory cycles are stolen
  - These are used in place of data channels
  - These are generated when a division by zero operation is executed
  - These can indicate completion of an I/O operation

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
d.

- 8) When a process is performing I/O, in which one of the following states it must be in?
- Ready
  - Blocked
  - Terminating
  - Running

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
b.

- 9) In a time sharing operating system, when the time slot allocated to a process is exhausted without the process completing execution, the process state would transit to which one of the following states?
- Ready state
  - Blocked state
  - Suspended state
  - Terminated state

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
a.

- 10) Which one of the following process state transitions cannot occur in a time shared operating system?
- Blocked to running
  - Ready to running
  - Blocked to ready
  - Running to ready

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
a.

- 11) In a virtual memory operating system, which one of the following events results in a page fault?
- An error occurs while accessing a specific page.
  - A program accesses a page that is currently residing in main memory.
  - A program accesses a page that is currently residing in main memory.
  - A program accesses a page belonging to another program.

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
b.

- 12) If the time quantum is made very large for a Round Robin (RR) scheduler, then which one of the following assertions would be true?
- The scheduling algorithm degenerates to the First Come First Served (FCFS) algorithm
  - More context switches will occur.
  - The average turnaround time increases
  - The scheduling algorithm degenerates to the Shortest Job Next (SJN) algorithm

1 point

- ☐ a.  
☐ b.  
☐ c.  
☐ d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
a.

c.