

Started on Wednesday, 19 November 2025, 11:34 AM

State Finished

Completed on Wednesday, 19 November 2025, 11:49 AM

Time taken 15 mins 13 secs

Marks 15.00/20.00

Grade **75.00** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

A developer observes segmentation faults in a C program. Which situation most commonly causes this?

- a. Writing to a log file
- b. Using too many threads
- c. Low network bandwidth
- d. Accessing array out of bounds

Question 2

Complete

Mark 1.00 out of 1.00

A DHCP client doesn't receive an IP address. Packet capture shows Discover messages but no Offer messages. Which is the most likely issue?

- a. Gateway unreachable
- b. Client is sending Discover to wrong MAC
- c. DNS not configured
- d. DHCP server not reachable or wrong VLAN

Question 3

Complete

Mark 1.00 out of 1.00

A file read operation is very slow on first access but fast on subsequent accesses. Why?

- a. File permissions change
- b. OS stores data in cache after first access
- c. Swap space used for caching
- d. Disk fragmentation

Question 4

Complete

Mark 1.00 out of 1.00

A network interface frequently flaps (UP/DOWN). Logs show "interface duplex mismatch." Which combination would cause this?

- a. Both sides full-duplex
- b. Both sides auto-negotiation
- c. Both sides half-duplex
- d. One side full-duplex, the other half-duplex

Question 5

Complete

Mark 1.00 out of 1.00

A process is in the "Blocked" state. Which most likely caused this?

- a. CPU preemption
- b. Finished execution
- c. Waiting for I/O
- d. Removed from the ready queue

Question 6

Complete

Mark 0.00 out of 1.00

A program enters an infinite loop with no blocking calls. What will likely happen?

- a. Memory leak is triggered
- b. CPU utilization goes to 0%
- c. CPU utilization reaches 100% for that core
- d. OS immediately kills the process

Question 7

Complete

Mark 1.00 out of 1.00

A program needs to create multiple isolated tasks that share code but have separate stacks. Which mechanism is BEST suited?

- a. Processes
- b. Signals
- c. Interrupt handlers
- d. Threads

Question 8

Complete

Mark 1.00 out of 1.00

A router receives a packet with TTL = 1. What will it do?

- a. Route it using a default route
- b. Forward it normally
- c. Fragment it
- d. Drop it and send ICMP Time Exceeded

Question 9

Complete

Mark 0.00 out of 1.00

A scheduled process is not getting CPU time, even though the CPU is free. What is a likely cause?

- a. Process is in zombie state
- b. Context switch disabled
- c. TLB miss
- d. Process priority is very low

Question 10

Complete

Mark 1.00 out of 1.00

A switch shows increasing MAC table entries until the table becomes full, after which it starts broadcasting unknown frames. What is the most likely cause?

- a. MAC address flooding attack
- b. Port security enabled
- c. STP disabled
- d. Wrong VLAN configuration

Question 11

Complete

Mark 1.00 out of 1.00

A system using virtual memory constantly swaps pages to disk. Performance becomes extremely slow. What is this situation called?

- a. Fragmentation
- b. Starvation
- c. Deadlock
- d. Thrashing

Question 12

Complete

Mark 1.00 out of 1.00

A TCP connection is established between two systems. Suddenly the receiver's advertised window becomes zero. What does the sender do?

- a. Immediately closes the connection
- b. Continues sending small packets
- c. Resets the congestion window
- d. Stops sending and waits for a window update

Question 13

Complete

Mark 0.00 out of 1.00

A thread holding a lock terminates unexpectedly. What is a likely consequence?

- a. Deadlock (lock stays unavailable)
- b. CPU halts
- c. Other threads automatically get the lock
- d. OS unlocks it immediately

Question 14

Complete

Mark 1.00 out of 1.00

A user cannot reach a website by domain name, but can reach it using the IP address. What is the likely issue?

- a. Incorrect subnet mask
- b. DNS resolution failure
- c. MTU mismatch
- d. Routing table issue

Question 15

Complete

Mark 1.00 out of 1.00

A user runs a program requiring more memory than physical RAM. What mechanism lets the OS still run it?

- a. Paging + Swap space
- b. Interrupt handling
- c. Cache replacement
- d. DMA

Question 16

Complete

Mark 0.00 out of 1.00

An HTTPS connection suddenly becomes slow. Packet analysis shows many retransmissions but no drops. What is a likely cause?

- a. High latency causing RTO spikes
- b. TLS handshake failure
- c. Congestion window too large
- d. Wrong subnet mask

Question 17

Complete

Mark 1.00 out of 1.00

In a multithreaded program, two threads try to write to the same shared variable without synchronization. What issue may occur?

- a. Thread starvation
- b. Race condition
- c. Deadlock
- d. Priority inversion

Question 18

Complete

Mark 0.00 out of 1.00

In a subnet 192.168.50.0/26, how many usable host IPs are available?

- a. 32
- b. 64
- c. 30
- d. 62

Question 19

Complete

Mark 1.00 out of 1.00

Two routers use static routes to reach each other but traffic is not passing. Which scenario is most likely the cause?

- a. MTU is too high
- b. Subnets use private IP
- c. Only one router has a return route (asymmetric routing)
- d. TTL too high

Question 20

Complete

Mark 1.00 out of 1.00

You observe repeated ARP requests from a host for an IP that does not exist in the network. What is the most common reason?

- a. ARP poisoning
- b. Incorrect gateway configuration
- c. DHCP starvation
- d. Host is performing IP scanning