Started on	Wednesday, 19 November 2025, 11:46 AM
State	Finished
Completed on	Wednesday, 19 November 2025, 11:50 AM
Time taken	4 mins 19 secs
Marks	16.00/20.00
Grade	**80.00** 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. Low network bandwidth
- b. Writing to a log file
- c. Using too many threads
- d. Accessing array out of bounds

Question 2

Complete

Mark 0.00 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. Client is sending Discover to wrong MAC
- b. DNS not configured
- c. DHCP server not reachable or wrong VLAN
- d. Gateway unreachable

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

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

Question 5

Complete

Mark 1.00 out of 1.00

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

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

Question 6

Complete

Mark 1.00 out of 1.00

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

- a. CPU utilization reaches 100% for that core
- b. CPU utilization goes to 0%
- c. Memory leak is triggered
- 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. Interrupt handlers
- b. Processes
- c. Signals
- 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. Drop it and send ICMP Time Exceeded
- b. Forward it normally
- c. Fragment it
- d. Route it using a default route

Question 9

Complete

Mark 1.00 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 priority is very low
- b. Context switch disabled
- c. Process is in zombie state
- d. TLB miss

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

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. Resets the congestion window
- b. Continues sending small packets
- c. Immediately closes the connection
- 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. OS unlocks it immediately
- c. Other threads automatically get the lock
- d. CPU halts

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. DNS resolution failure
- b. MTU mismatch
- c. Incorrect subnet mask
- 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. Interrupt handling
- b. Paging + Swap space
- c. DMA
- d. Cache replacement

Question 16

Complete

Mark 1.00 out of 1.00

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

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

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

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

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

Question 20

Complete

Mark 0.00 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. DHCP starvation
b. ARP poisoning
c. Host is performing IP scanning
d. Incorrect gateway configuration