Started on	Thursday, 13 November 2025, 11:59 AM
State	Finished
Completed on	Thursday, 13 November 2025, 12:10 PM
Time taken	10 mins 32 secs
Marks	14.00/20.00
Grade	**70.00** out of 100.00

Question 1
Complete
Mark 1.00 out of 1.00

In a multi-threaded process, which resource is shared among threads?

○ a. Program counter
◉ b. Heap
○ c. Stack
○ d. Registers

Question 2
Complete
Mark 1.00 out of 1.00

In C++, which of these scenarios leads to undefined behavior?

○ a. Accessing array out of bounds.
○ b. Accessing a deleted pointer.
○ c. Modifying a const object via pointer cast.
◉ d. All of the above.

Question 3
Complete
Mark 1.00 out of 1.00

In TCP, what is the purpose of the 3-way handshake?

◉ a. Establish reliable connection between sender and receiver
○ b. Synchronize window sizes only
○ c. Acknowledge packet receipt
○ d. Perform error correction

Question 4

Complete

Mark 1.00 out of 1.00

What does the 'thrashing' phenomenon refer to?

- ○ a. Cache coherence issues
- ⦿ b. Swapping pages in and out excessively
- ○ c. Process switching frequently due to CPU burst
- ○ d. Deadlock between I/O and memory

Question 5

Complete

Mark 1.00 out of 1.00

What is the main purpose of ARP (Address Resolution Protocol)?

- ○ a. Resolve domain names to IP addresses
- ○ b. Encrypt network packets
- ○ c. Resolve MAC address to IP address
- ⦿ d. Resolve IP address to MAC address

Question 6

Complete

Mark 1.00 out of 1.00

What is the output of the following Python code?

```
a = [1, 2, 3]
b = a
a += [4, 5]
print(a, b)
```

- ○ a. Error
- ○ b. [1,2,3] [1,2,3,4,5]
- ○ c. [1,2,3,4,5] [1,2,3]
- ⦿ d. [1,2,3,4,5] [1,2,3,4,5]

Question 7

Complete

Mark 1.00 out of 1.00

What is the output of the symmetric difference (x ^ y)?

```
x = {1, 2, 3}
y = {2, 3, 4}
print(x ^ y)
```

- ○ a.   {}
- ○ b.   {1, 2, 3, 4}
- ◉ c.   {1, 4}
- ○ d.   {2, 3}

Question 8

Complete

Mark 1.00 out of 1.00

What will be the output of the following C++ code?

```cpp
class Base {
    public: virtual void show() {
        cout << 'Base';
    }
};
class Derived: public Base {
    public: void show() override {
        cout << 'Derived';
    }
};
int main() {
    Base *b = new Derived();
    b -> show();
}
```

- ◉ a.   Derived
- ○ b.   Runtime error
- ○ c.   Base
- ○ d.   Compile-time error

Question 9

Complete

Mark 0.00 out of 1.00

What will be the output of the Python code?

```
def func(x, y = []):
    y.append(x)
    return y
print(func(1)) print(func(2))
```

○ a. Error

○ b. [1, 2] [1, 2]

◉ c. [1] [2]

○ d. [1] [1, 2]

Question 10

Complete

Mark 0.00 out of 1.00

What will be the output?

```
int a = 10;
int & r; = a;
r++;
cout << a;
```

◉ a. 11

○ b. 10

○ c. Undefined behavior

○ d. Compilation error

Question 11

Complete

Mark 0.00 out of 1.00

Which layer in the OSI model ensures error-free delivery of data?

○ a. Network layer

◉ b. Transport layer

○ c. Session layer

○ d. Data link layer

Question 12

Complete

Mark 1.00 out of 1.00

Which of the following addresses represents a loopback IP?

- ○ a. 10.0.0.1
- ○ b. 0.0.0.0
- ○ c. 192.168.1.1
- ◉ d. 127.0.0.1

Question 13

Complete

Mark 1.00 out of 1.00

Which of the following is a synchronization tool?

- ◉ a. Semaphore
- ○ b. Scheduler
- ○ c. Thread
- ○ d. PCB

Question 14

Complete

Mark 1.00 out of 1.00

Which of the following is not a Python data type?

- ◉ a. byte
- ○ b. frozenset
- ○ c. complex
- ○ d. tuple

Question 15

Complete

Mark 1.00 out of 1.00

Which of the following is true about paging?

- ○ a. Logical and physical addresses are identical.
- ◉ b. It suffers from internal fragmentation.
- ○ c. It requires contiguous allocation.
- ○ d. Fragmentation is eliminated.

Question 16

Complete

Mark 1.00 out of 1.00

Which of the following is true about std::move() in C++11?

- ○ a.   It duplicates the resource.
- ○ b.   It calls the copy constructor.
- ○ c.   It performs a deep copy.
- ● d.   It transfers ownership of resources.

Question 17

Complete

Mark 0.00 out of 1.00

Which of the following protocols uses port 443?

- ○ a.   SMTP
- ○ b.   FTP
- ○ c.   HTTPS
- ● d.   SSH

Question 18

Complete

Mark 1.00 out of 1.00

Which of the following statements is true about Python generators?

- ○ a.   They always return lists.
- ○ b.   They store all values in memory.
- ● c.   They return an iterator that yields one value at a time.
- ○ d.   They cannot use for loops.

Question 19

Complete

Mark 0.00 out of 1.00

Which scheduling algorithm can cause starvation?

- ○ a.   First Come First Serve
- ○ b.   Multilevel Queue with fixed priority
- ○ c.   Round Robin
- ● d.   Shortest Job Next

Question 20

Complete

Mark 0.00 out of 1.00

Which statement is true regarding const correctness?

- ○ a.   A const member function cannot modify any class data.
- ◉ b.   A const object can call non-const methods.
- ○ c.   You can assign to a const reference.
- ○ d.   You can modify a const variable through a pointer.