

Started on Tuesday, 15 July 2025, 11:32 AM**State** Finished**Completed on** Tuesday, 15 July 2025, 11:41 AM**Time taken** 8 mins 55 secs**Marks** 10.00/16.00**Grade** 62.50 out of 100.00**Question 1**

Complete

Mark 1.00 out of 1.00

_____ is a collection of interrelated data organized in specific forms.

- ☒ a. Database
- ☐ b. DataItem
- ☐ c. DataMart
- ☐ d. DataWarehouse

Question 2

Complete

Mark 1.00 out of 1.00

Copy constructor takes _____ argument(s).

- ☒ a. one
- ☐ b. two
- ☐ c. arbitrary number of
- ☐ d. no

Question 3

Complete

Mark 1.00 out of 1.00

Data structure representation in memory is termed as:

- ☐ a. Recursive data type
- ☒ b. Storage structure
- ☐ c. File structure
- ☐ d. Abstract data type

Question 4

Complete

Mark 0.00 out of 1.00

Identify the addressing mode of the given instruction: $R3 \leftarrow R3 + M[R1 + R2]$

- ☐ a. Indexed
- ☐ b. Direct
- ☐ c. Immediate
- ☒ d. Register

Question 5

Complete

Mark 1.00 out of 1.00

In the C++ code provided, what is the error (if any)?

```
class sample {  
    mutable int a;          // line 1  
public:  
    sample() { a = 10; }  
    void func() const {     // line 2  
        a++;  
        cout << a;         // line 3  
    }  
};  
int main() {  
    sample s1;  
    s1.func();  
    return 0;  
}
```

- ☐ a. Error at line 2 – function func cannot be declared as const
- ☒ b. There is no error in the code. The output is 11
- ☐ c. Error at line 3 – mutable int a cannot be overwritten
- ☐ d. Error at line 1 – int a cannot be declared as mutable

Question 6

Complete

Mark 1.00 out of 1.00

SNMP is an application program that allows:

1. Retrieve value of object in agent
2. Store value in agent
3. Agent sends alarm to manager.

Choose correct:

- ☐ a. Only 1 and 2
- ☐ b. Only 2 and 3
- ☒ c. All 1, 2 and 3
- ☐ d. Only 1

Question 7

Complete

Mark 1.00 out of 1.00

What is the maximum degree of any vertex in a simple graph with n vertices?

- ☐ a. $2n-1$
- ☐ b. n
- ☐ c. $n+1$
- ☒ d. $n-1$

Question 8

Complete

Mark 1.00 out of 1.00

What is the only function all C++ programs must contain?

- ☐ a. `start()`
- ☐ b. `system()`
- ☐ c. `program()`
- ☒ d. `main()`

Question 9

Complete

Mark 1.00 out of 1.00

What is the order of Quick Sort in the worst case?

- ☒ a. $O(n^2)$
- ☐ b. $O(n)$
- ☐ c. $O(n \log n)$
- ☐ d. $O(\log n)$

Question 10

Complete

Mark 0.00 out of 1.00

What will be the output of the following code?

```
#include <stdio.h>
#define scanf "SCAR"
int main(void) {
    printf(scanf, scanf);
    return 0;
}
```

- ☐ a. SCAR
- ☐ b. Compilation Error
- ☐ c. AR
- ☒ d. SCARSCAR

Question 11

Complete

Mark 1.00 out of 1.00

What would be the maximum number of hosts per subnet in a class B network with subnet mask 255.255.248.0?

- ☐ a. 2047
- ☐ b. 1023
- ☒ c. 2046
- ☐ d. 1022

Question 12

Complete

Mark 0.00 out of 1.00

Which is the most appropriate way of defining primary key?

- ☐ a. None of the mentioned options
- ☒ b. `CREATE TABLE table_name (column_name PRIMARY KEY data_type NOT NULL, ...);`
- ☐ c. `CREATE TABLE table_name(column_name data_type constraint, PRIMARY KEY (column_name), ...);`
- ☐ d. `CREATE TABLE table_name PRIMARY KEY (Column_name Constraints, ...);`

Question 13

Complete

Mark 0.00 out of 1.00

Which of the following is correct as per the classification under Class B Address of IP address?

- ☐ a. Network bit – 12, Host bit – 14
- ☐ b. Network bit – 18, Host bit – 16
- ☐ c. Network bit – 14, Host bit – 16
- ☒ d. Network bit – 16, Host bit – 14

Question 14

Complete

Mark 0.00 out of 1.00

Which of the following layers functions as a liaison between user support layers and network support layers?

- ☐ a. Transport layer
- ☒ b. Network layer
- ☐ c. Session layer
- ☐ d. Physical layer

Question 15

Complete

Mark 0.00 out of 1.00

Which of the following OSI model layers are host-to-host layers?

- ☐ a. Network, Transport, Session, Presentation
- ☐ b. Datalink, Network, Transport, Session
- ☐ c. Physical, Datalink, Network, Transport
- ☒ d. Transport, Session, Presentation, Application

Question 16

Complete

Mark 1.00 out of 1.00

Which of the following statements correctly defines the operation performed by the short-term scheduler?

- ☐ a. It selects which process has to be brought into the ready queue
- ☒ b. It selects which process has to be executed next and allocates CPU
- ☐ c. None of the mentioned options
- ☐ d. It selects which process has to be removed from memory by swapping