

**B-23-Z**

Roll No. ....

Total No. of Questions : 8]

[Total No. of Printed Pages : 7

**12<sup>th</sup>ARM(SZ)JKUT2024  
1123-Z  
COMPUTER SCIENCE**

Time : 3 Hours]

[Maximum Marks : 70

**SECTION-I**

1. (i) Explain the following terms with examples :

(a) Class

(b) Object

(c) Data encapsulation

*Or*

Discuss the advantages of Object Oriented Programming. 4

(ii) Explain the significant role of scope resolution operator

in C++. 3

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Turn Over

- (iii) Explain, giving suitable examples, how member functions can be defined outside the class ? 3
- (iv) What is Data Encapsulation ? 2
- (v) How do objects communicate with one another by sending and receiving data ? (True/False) 1
- (vi) Which operator can be used to define a function outside the class ?
- (A) ::
- (B) :
- (C) →
- (D) \*
- (vii) In C++, function overloading is a type of polymorphism. (True/False) 1

**SECTION-2**

2. (i) What is a constructor ? Illustrate the concept of constructor overloading in C++. 3
- (ii) Constructors do not have return type not even void. (True/False) 1
- (iii) Can constructors in C++ be declared as private within a class ? (True/False) 1

**SECTION-3**

3. (i) Discuss multiple inheritance in C++. 3
- (ii) By default, members of a class in C++ are private. (True/False) 1
- (iii) Function overloading is an example of early binding. (True/False) 1

**SECTION-4**

4. (i) What is a pointer in C++ ? Provide a brief description of its purpose and state how it differs from regular variables ? 3

(ii) It is not permitted to decrement a pointer by a non-integer value.

(True/False) 1

(iii) The operator used to access the value pointed to by a pointer

is :

(A) &

(B) :

(C) \*

(D) →

1

### SECTION-5

5. (i) Giving algorithms, describe the push and pop operations.

*Or*

Explain enqueue with the help of an example.

4

(ii) Explain the Bubble Sort algorithm.

3

(iii) Explain briefly string constant.

2

(ix) Which operation adds an element to the top of the stack ?

(A) Pop

(B) Push

(C) Enqueue

(D) Dequeue

1

### SECTION-6

6. (x) Give detailed description about Relational Data Model.

*Or*

What is a key ? Describe various types of keys in context with

SQL. <https://www.jkboseonline.com>

4

(ii) Describe the number, char and date data types of SQL.

3

(iii) Giving syntax, describe the use of DROP command  
in SQL.

2

(iv) UPDATE is a DML command.

(True/False) 1

**SECTION-7**

7. (i) Explain the function of a NOR gate.

*Or*

State and explain, giving truth table, the DeMorgan's laws. 4

(ii) Write and explain NAND gate. 3

(iii) Describe operation of a NOT gate. 2

(iv) If  $A = 1$ ,  $B = 1$  and  $C = 0$  are three inputs of an AND gate, then its output  $Y = A.B.C$  will be :

(A) 110

(B) 0

(C) 1

(D) 001

1

**SECTION-8**

8. (i) What is Network Topology ? Explain STAR network topology.

*Or*

Describe optical fibre with its advantages and disadvantages.

4

(ii) What is Cyber Bullying ? What measures can be taken for its prevention ?

3

(iii) Explain briefly phishing.

2

(iv) Why is it essential to remain mindful of online friend requests from unknown individuals ?

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