12th 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

(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) *

     1

(vii) In C++, function overloading is a type of polymorphism.

(True/False)   1

12ᵗʰARM(SZ)JKUT2024—1123-Z

B—23-Z

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 printer 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. (i) 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

12th ARM(SZ)JKUT2024—1123-Z
B-23-Z

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 ?   **1**

12thARM(SZ)JKUT2024—1123-Z
B-23-Z