

**B-16-Y**

Roll No.. .....

Total No. of Questions : 8].

[Total No. of Printed Pages : 7

**XIIARJKUT23**

**9116-Y**

**COMPUTER SCIENCE**

Time : 3 Hours]

[Maximum Marks : 70

**SECTION-1**

1. (i) How is member function defined inside a class ? Explain with an example.

*Or*

How is a class defined in C++ ? Explain member functions of a class.

4

- (ii) How is Polymorphism achieved at run time ?

3

- (iii) Write features of object oriented programming.

3

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Turn Over

- (iv) What is an object ? 2
- (v) Wrapping up of data and functions together is known as ..... (Fill in the blank) 1
- (vi) Public member is not accessible outside the class. (True/False) 1
- (vii) How many objects can be in the same class ?
- (A) 02
  - (B) 04
  - (C) 03
  - (D) As much as possible 1

**SECTION-2**

2. (i) Define Default Constructor. How to write it ? Explain with example. 3
- (ii) A Destructor is used to destroy the objects. (True/False) 1
- (iii) Like constructor, there can be more than one destructor in a class. (True/False) 1

**SECTION-3**

3. (i) What are different types of Inheritance supported by C++ ?  
Explain any such one. 3
- (ii) Define derived class. 1
- (iii) Which symbol is used to create multiple inheritance ?
- (A) Colon (:)
- (B) Comma (,)
- (C) Dot (.)
- (D) None of these 1

**SECTION-4**

4. (i) Explain declaration and initialization of pointers. 3
- (ii) What is stored in pointer variable ?
- (A) An integer
- (B) Floating point value
- (C) A memory address
- (D) Any C++ value 1
- (iii) This pointer points to another class. (True/False) 1

**SECTION-5**

5. (i) Differentiate between Linear search and Binary Search.

*Or*

Write a C++ program to push an element into a stack. 4

(ii) What is an Array ? Explain 1D array.

3

(iii) Define Enqueue and Dequeue.

2

(iv) Define Array Index.

1

**SECTION-6**

6. (i) What is SQL ? Explain *three* parts of SQL.

Or

What is Database ? Explain relational data model.

4

(ii) Define the following SQL functions :

(a) SUM()

(b) MAX()

3

(iii) Define CREATE command with syntax.

2

(iv) ..... is defined as a set of values of the same type.

- (A) Tuple
- (B) Relation
- (C) Attribute
- (D) Domain

1

**SECTION-7**

7. (i) State and explain principle of duality. Why is it important in Boolean algebra ?

*Or*

Explain functioning of AND gate with circuit diagram and Truth-Table.

4

(ii) State and prove Distributive Law by Truth-Table. 3

(iii) Draw Truth-Table of OR operator. 2

(iv) Which of the following is Universal Gate ?

(A) AND

(B) OR

(C) NAND

(D) NOT 1

**SECTION-8**

8. (i) Describe coaxial cable with its advantages and disadvantages.

*Or*

What is Cyber Security ? Why is cyber security important ?

Explain. 4

- (ii) Define Networking and write its advantages. 3
- (iii) Write a brief note on Star Topology. 2
- (iv) Which of the following is not a Computer Network ?
- (A) TAN
  - (B) PAN
  - (C) LAN
  - (D) MAN
- 1

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**A-31-C**

Total No. of Questions : 8]

[Total No. of Printed Pages :

**12<sup>th</sup>SZARJD22**  
**6031-C**  
**COMPUTER SCIENCE**

**Time : 2.30 Hours]**

**[Maximum Marks : 70**

Section-1

1. (i) Explain the concept of Object Oriented Programming. Enlist its advantages.

Or

Explain concepts of Data Encapsulation and Data Hiding.

(ii) What is Class? Describe the syntax of class declaration.

(iii) Write a program to implement concept of function overloading.

(iv) Explain Data Abstraction.

(v) Define an Object.

(vi) Members of class are by default private.

(vii) We can define member function outside the class :

(A) Using structures

(B) Using pointers

(C) Using scope resolution operator

(D) None of these



## Section-2

2. (i) What is a Constructor? Describe parameterized constructor.
- (ii) Constructor does not allow any parameters.
- (iii) A Destructor:
  - (A) destroys classes
  - (B) can be overloaded
  - (C) destroys the objects created by a constructor
  - (D) none of these

## Section-3

3. (i) What is Inheritance? Describe the concept of multiple inheritance.
- (ii) Define Public Visibility Mode.
- (iii) In multilevel inheritance, a subclass inherits from multiple base-classes.

## Section-4

4. (i) Giving a suitable example, explain a "Pointer".
- (ii) A pointer can be incremented/decremented.
- (iii) A delete operator is used:
  - (A) To reallocate the memory
  - (B) To deallocate the memory
  - (C) Both (A) and (B)
  - (D) None of these

## Section-5

5. (1) Explain Binary Search.

Or

Define an Array. Describe its Memory Representation.

(ii) Define Stack. Describe two main operations performed on a stack.

(iii) Define Multidimensional Array.

(iv) Stack is a data structure which follows:

(A) FIFO principle

(B) LIFO principle

(C) Both (A) and (B)

(D) None of these

#### Section-6

6. (i) Define Database. What are its advantages?

Or

What is DDL? Discuss its commands.

(ii) Define SQL. What are its advantages?

(iii) Define Degree and cardinality of relation.

(iv) Write the use of SQL function Min( ).

#### Section-7

7. (i) Explain Universal Gate behaviour of a NAND Gate.

Or

Giving Logic Gate Symbol and truth table, describe the principle operation of OR Gate.

(ii) State and explain De Morgan's laws using truth table.

- (iii) Explain NOT Operator using truth table.
- (iv) The output of AND Gate is 1 when the two inputs are:
- (A) 0 and 1
  - (B) 1 and 1
  - (C) 1 and 0
  - (D) None of these

#### Section-8

8. (i) Define Network Topology. Explain Star Topology.

Or

Define Cyber Bullying. What are its preventive measures?

- (ii) Write down a note on Safe Social Networking.
- (iii) Describe the use of Modem.
- (iv) In networking PAN stands for

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**B-34-B**

Roll No.....

Total No. of Questions : 8 ]

[ Total No. of Printed Pages : 7

**XIIKDAR21**

**5034-B**

**COMPUTER SCIENCE**

Time : 3 Hours ]

[ Maximum Marks : 70

**Section-1**

1. (i) Explain the concept of scope resolution operator with the help of a C++ program.

*Or*

Define object-oriented language. Explain its various elements. 4

- (ii) Define Class. Explain Data Members and Member Functions of a Class. 3

(iii) Define Object Explain Array of objects. 3

(iv) Explain the significance of Access specifier. 2

(v) Define Polymorphism. 1

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Turn Over

**B-34-B**

( 2 )

(i) C++ is a object-oriented programming language.

(True/False) 1

(ii) How many access specifiers are there in C++ ?

(A) 04

(B) 01

(C) 03

(D) 02

1

**Section-2**

2. Define Constructor. Explain Default Constructor.

3

(i) Destructor can not be inherited.

(True/False) 1

(ii) ..... is called when an object goes out of scope.

(A) Class

(B) Destructor

(C) Main Function

(D) Constructor

1

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**B-34-B**

**Section-3**

3. (i) Define Inheritance. Explain multilevel inheritance and multiple inheritance. 3
- (ii) Define private visibility mode. 1
- (iii) Inheritance supports Data Hiding. (True/False) 1

**Section-4**

1. (i) Define Pointer. Explain its declaration. 3
- (ii) Define Delete Operator. 1
- (iii) Memory allocated during compilation of a program is called .....
- (A) New Allocation
- (B) Variable Allocation
- (C) Static Allocation
- (D) Dynamic Allocation. 1

( 4 )

**Section-5**

(i) Define an Array. Explain transversal operation in Array.

*Or*

What do you mean by Sorting ? Explain Bubble sort with the help of example. 4

(ii) Define Stack Explain its two operations. 3

(iii) What is a Queue ? Give its two advantages. 2

(iv) FIFO is used in .....

(A) Queue

(B) Linked List

(C) Stack

(D) Array

1

**Section-6**

(i) Explain Data Definition Language and Data Manipulation Language in SQL.

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( 5 )

Or

Explain Database and write its advantages.

4

(ii) Define the following terms

(a) Domain

(b) Primary key

(c) Tuple

(iii) Write *three* Parts of SQL.

(iv) Which of the following SQL command is used to add a column to an existing table ?

(A) Select

(B) Update

(C) Create

(D) Alter

### Section-7

7. (i) State and prove De-Morgan's laws by using Truth-Table.

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( 6 )

*Or*

- Explain NAND and NOR gate with Truth-Table and logic circuits. 4
- (ii) State and explain Principle of Duality 3
- (iii) Define AND and OR operators. 2
- (iv) Truth-Table is used to express :
- (A) Boolean Subtraction
  - (B) Boolean Division
  - (C) Boolean Expression
  - (D) Boolean Addition 1

**Section-8**

- i) Define Topology. Explain Bus and Ring Topologies in detail.

*Or*

Write a note on Transmission Media. 4

(ii) What do you mean by Network ? Explain Local Area Network. 3

(iii) What is Cyber Security ? 2

(iv) Network failure is Primarily a ..... issue.

(A) Performance

(B) Security

(C) Reliability

(D) None of these

1

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**B-28-A**

Roll No.....

Total No. of Questions : 21]

[Total No. of Printed Pages : 3

**HSEIIRWZJO17**

**15228-A**

**COMPUTER SCIENCE**

Time : 3 Hours]

[Maximum Marks : 70

(Long Answer Type Questions) 5 each

1. What do you understand by procedural programming paradigm and object oriented programming paradigm ?

Or

Write a C++ program that reverses and sums up the digits of an integer.

2. What is Inheritance ? Differentiate between multiple and multilevel inheritance.

Or

What are open( ) and close( ) functions in data file handling ? Explain.

3. What is binary search ? Write its algorithm.

Or

What is a stack ? Which operations are possible on a stack ? Explain.

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**B-28-A**

Turn Over

( 2 )

4. What is optical fiber ? Give its advantages and disadvantages.  
Or

Give description of tree topology with its merits and demerits.  
(Short Answer Type Questions)

3 each

5. Give syntax and meaning of ALTER table command.
6. Define Domain and tuple.
7. State principle of duality.
8. Differentiate between constructor and destructor.
9. What is scope resolution operator ? Explain.
10. Explain polymorphism.
11. What is circular queue ?
12. Describe tell  $g()$  and seek  $p()$  functions.

(Very Short Answer Type Questions)

2 each

13. What is deference operator ? <https://www.jkboseonline.com>
14. Define Selection sort.
15. Give truth table of AND gate.
16. What is a binary file ?
17. What is protected derived class ?
18. Give two uses of K-map.
19. What is WLL ?
20. Define NEW operator.

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**B-28-A**

## (Objective Type Questions)

1 each

21. (i) Queues are operated on basis of :
- (a) FIFO (b) LIFO  
(c) DEFO (d) None of these
- (ii) Deletion of element in stack is :
- (a) POP (b) PUSH  
(c) DOP (d) None of these
- (iii) An array is a collection of similar data. (True or False)
- (iv) Queue follows FCFS principle. (True or False)
- (v) File extension for C++ is ..... (Fill up)
- (vi) SQL means ..... (Fill up)
- (vii)  $\bar{a} = a$  represents ..... Law. (Fill up)
- (viii) Half duplex allows ..... communication. (Fill up)
- (ix) PPP (Give full form)
- (x) ISP (Give full form)

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