Time: 3 Hours   Max. Marks: 100

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*
1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice
Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be
evaluated/checked.

SECTION-A   20

1. Attempt all parts:-

1-a.   The result of $4 \ll 2$ is (CO1,K1)   1

    (a)   4

    (b)   8

    (c)   16

    (d)   0

1-b.   Choose a syntax for C Ternary operator from the list.(CO1,K1)   1

    (a)   condition ? expression1 : expression2;

    (b)   condition : expression1 ? expression2;

    (c)   condition ? expression1 < expression2;

    (d)   condition < expression1 ? expression2;

1-c.   Which from the following is used for invoking a function? (CO2,K1)   1

    (a)   call-by-reference

    (b)   call-by-value

    (c)   call-by-functions

    (d)   Both A and B

1-d.   Which operator is used for accessing global variables if the local variable of same   1
    name exists in the code?(CO2,K1)

    (a)   Unary scope resolution operator

    (b)   Accessing resolution operator

(c) Ternary resolution operator

(d) None of them

1-e. Which of the following concepts means determining at runtime what method to invoke? (CO3,K2)   1

(a) Data hiding

(b) Dynamic Typing

(c) Dynamic binding

(d) Dynamic loading

1-f. Which of the following type of class allows only one object of it to be created? (CO3,K2)   1

(a) Virtual class

(b) Abstract class

(c) Singleton class

(d) Friend class

1-g. The pointer to a function is known as …………………. function. (CO4,K2)   1

(a) forward

(b) pointer

(c) callback

(d) backward

1-h. How to handle error in the destructor? (CO4,K2)   1

(a) throwing

(b) terminate

(c) both throwing & terminate

(d) try

1-i. Class diagrams are not useful to _____ . (CO5,K3)   1

(a) model simple collaborations

(b) model the vocabulary of a system

(c) model simple interactions

(d) model a logical database schema

1-j. Sequence diagram is _____oriented. (CO5,K3)   1

(a) Time

(b) Class

(c) Activity

(d) None of these

2. Attempt all parts:-

2.a. Give example of unary operators? (CO1,K1)   2

2.b. Define Function overloading with example. (CO2,K2)   2

2.c. Explain how OOP concepts like inheritance and polymorphism promote   2

reusability..(CO3,K2)

2.d.	How can we create our own exception ? (CO4,K3)	2
2.e.	What is input/output stream in c++? (CO5,K3)	2

SECTION-B 30

3. Answer any <u>five</u> of the following:-

3-a.	Why are namespaces used in C++? (CO1,K2)	6
3-b.	Write a program that prompts the user to enter two numbers and checks if they are equal or not.(CO1,K3)	6
3-c.	Write down a detailed C program to demonstrate the use of try, catch, throw and nested try. (CO2,K3)	6
3-d.	Explain the concepts of classes and objects in C++. How are objects created and used? Give a simple example to illustrate. (CO2,K2)	6
3.e.	How does OOP improve code maintainability and modularity? Illustrate your answer with an example.(CO3,K3)	6
3.f.	What is operator overloading in c++? (CO4,K3)	6
3.g.	What does associations in a class diagram mean? (CO5,K3)	6

SECTION-C 50

4. Answer any <u>one</u> of the following:-

4-a.	Classify the different statements available in C++.(CO1,K3)	10
4-b.	Differentiate between break and continue statement.(CO1,K3)	10

5. Answer any <u>one</u> of the following:-

5-a.	Explain about inline function?(CO2,K2)	10
5-b.	Explain new and delete operator? (CO2,K2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Write a program explaining Function overloading: writing string operations like strcat and strncat, strcpy and strncpy as overloaded functions. (CO3,K3)	10
6-b.	What do you know about friend class and friend function? (CO3,K2)	10

7. Answer any <u>one</u> of the following:-

7-a.	Explain the types of polymorphism with a suitable example. (CO4,K2)	10
7-b.	List out visibility of inherited members in various categories of inheritance.(CO4,K3)	10

8. Answer any <u>one</u> of the following:-

8-a.	Draw Sequence diagram for issuing books from library.(CO5,K4)	10
8-b.	Draw a Class diagram for issuing and returning books from library.(CO5,K4)	10