

GURU NANAK INSTITUTE OF TECHNOLOGY

An Autonomous Institute under MAKAUT

2020-2021

PROGRAMMING PRACTICE WITH C++

IT504A

TIME ALLOTTED: 3 HOURS

FULL MARKS: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

Answer any *ten* from the following, choosing the correct alternative of each question: **10×1=10**

		Marks	CO No
1(i)	A friend function has access to a) all private and protected members of the class for which it is a friend b) only private members c) all public members d) none of these.	1	CO1
1(ii)	Reusability of the code can be achieved in CPP through _____. a) Polymorphism b) Encapsulation c) Inheritance d) Both a and c	1	CO1
1(iii)	Which of the following is called address operator? a) * b) & c) _ d) %	1	CO1
1(iv)	How structures and classes in C++ differ? a) Classes follows OOP concepts whereas structure does not b) In Structures, members are private by default whereas in Classes they are public by default c) Structures by default hide every member d) Classes and Structures are the same	1	CO1
1(v)	If a program uses Inline Function, then the function is expanded inline at _____. a) Compile time b) Run time c) Both a and b d) None of these	1	CO2

1(vi) What is the output of the following C++ code? 1 CO3

```
#include<iostream>
using namespace std;
int x = 1;
int main()
{
int x = 2;
{
int x = 3;
cout << ::x << endl;
}
return 0;
}
```

- a) 1
- b) 2
- c) 3
- d) 123

1(vii) What is the output of the following program? 1 CO3

```
#include<iostream>

using namespace std;
void swap(int m, int n) {
int x = m;

m = n;
n = x;
}
main() {
int x = 5, y = 3;

swap(x,y);
cout<<x<<" "<<y;
}
```

- a) - 3 5
- b) - 5 3
- c) - 5 5
- d) - Compile error

1(viii) How many types of polymorphism are there? 1 CO2

- a) 1
- b) 2
- c) 3
- d) 4

B. TECH/ IT//ODD/SEM-V/IT504A/R18/2020-2021

1(xi)	In which type do the enumerators are stored by the compiler? a) string b) integer c) float d) none of the mentioned	1	CO4
1(x)	What is the difference between protected and private access specifiers in inheritance? a) private member is not inheritable and not accessible in derived class. b) protected member is inheritable and also accessible in derived class. c) Both are inheritable but private is accessible in the derived class d) Both are inheritable but protected is not accessible in the derived class.	1	CO4
1(xi)	What is operator overloading in C++? a) Overriding the operator meaning by the user defined meaning for user defined data type b) Redefining the way operator works for user defined types c) Ability to provide the operators with some special meaning for user defined data type d) All of the mentioned	1	CO5
1(xi)	Which reference modifier is used to define reference variable? a) & b) \$ c) # d) none of the mentioned	1	CO3

GROUP – B

(Short Answer Type Questions)

(Answer any *three* of the following) **3 x 5 = 15**

		Marks	CO No
2.(a)	What is the difference between public, private and protective data member.	3	CO2
2.(b)	Write a C++ program to illustrate reference variable?	2	CO2
3.(a)	What is enumeration?	2	CO2
3.(b)	Explain friend function?	3	CO3
4.(a)	Mention the differences between return by value and return by reference.	4	CO3
4.(b)	When does the ambiguity problem arise?	1	CO3
5.(a)	How can we create an abstract class in C++?	2	CO3
5.(b)	How can we use the member functions of an abstract class? Discuss with example.	3	CO4
6.(a)	How can we declare and initialize a static data member in a class	2	CO4
6.(b)	What are the features of a static member function?	3	CO4

GROUP – C

(Long Answer Type Questions)

Answer any *three* from the following: **3×15=45**

		Marks	CO No
7.(a)	Overload the ++ operator in the same class for pre and post increment?	5	CO3
7.(b)	WAP which will add two complex numbers(both real and imaginary part) using operator overloading concept.	5	CO4
7.(c)	What is class template? Show its use programmatically?	5	CO4
8.(a)	What is function template? Show its use?	5	CO4
8.(b)	How can we use more than one argument with a function template?	5	CO4
8.(c)	Discuss difference between overloading and overriding?	5	CO3
9.(a)	Explain lambda expression with example?	5	CO5
9.(b)	Explain Uniform Initialization in C++?	3	CO5
9.(c)	What is template? What is the purpose of using template.	4	CO5
9.(d)	What is the use of new operator? Discuss with example.	3	CO4
10.(a)	Describe the features of constructor?	3	CO4
10.(b)	What is 'dynamic initialization' of objects?	3	CO3
10.(c)	Discuss the use of copy constructor with example.	5	CO4
10.(d)	Differentiate between constructor and destructor	4	CO4
11.(a)	What is exception in C++??	1	CO4
11.(b)	How is an exception handled in C++. Describe with an example?	3	CO4
11.(c)	What is function template?	2	CO4
11.(d)	How can we use more than one argument with a function template?	5	CO4
11.(e)	Write a member function of a class that returns object?	4	CO3