BIT, First Year, Second Semester   Full Marks : 100
Subject : **Introduction to C++ programming**   Pass Marks : 40
Set : A   Time : 3 hrs

Group A (Multiple Choice Questions)
Select the correct answers: [30x1=30]

1. Which of the following term is used for a function defined inside a class?

    (a) Member Variable **(b) Member function** (c) Class function (d) Classic function

2. Why reference is not same as a pointer?

    (a) A reference can never be null.

    (b) A reference once established cannot be changed.

    (c) Reference doesn't need an explicit dereferencing mechanism.

    (d) All of the above.

3. *cout* is a/an _____ .

    (a) operator   (b) function   **(c) object**   (d) macro

4. Which of the following approach is adapted by C++?

    (a) Top-down   **(b) Bottom-up**   (c) Right-left   (d) Left-right

5. Which of the following operator is overloaded for object cout?

    (a) >>   **(b) <<**   (c) +   (d) =

6. Which of the following header file includes definition of *cin* and *cout*?

    (a) istream.h   (b) iomanip.h (c) ostream.h **(d) iostream.h**

7. Which of the following statement will be correct if the function has three arguments passed to it?

    (a) The arguments from the right side will be the default argument.

    (b) The first argument will be the default argument.

    (c) The middle argument will be the default argument.

    (d) All the argument will be the default argument.

8. Which of the following statement is correct?

    (a) Overloaded functions can accept same number of arguments.

    (b) Overloaded functions always return value of same data type.

    (c) Overloaded functions can accept only same number and same type of arguments.

    (d) Overloaded functions can accept only different number and different type of arguments.

9. How many types of macros are there in c++?

    (a) 1   **(b) 2**   (c) 3   (d) 4

10. What is this operator called ?: ?

    (a) conditional (b) relational   (c) casting operator (d) none of the mentioned

11. Which operator is used to signify the namespace?

    (a) conditional operator   (b) ternary operator

    (c) scope operator   (d) none of the mentioned

12. Which keyword is used to access the variable in namespace?

    (a) using   (b) dynamic   (c) const   (d) static

13. What will happen in this code?

int a = 100, b = 200;

 int *p = &a, *q = &b;

p = q;

(a) b is assigned to a   **(b) p now points to b**

(c) a is assigned to b   (d) q now points to a

14. Which of the following is a correct comment?

(a) */ Comments */   (b) ** Comment **

(c) /* Comment */   (d) { Comment }

15. Because the lifetime of a local variable is limited and determined automatically, these variables are also called ……………………….

(a) automator   **(b) automatic**   (c) dynamic   (d) static

16. Hiding the complexity is known as …………….

(a) Abstraction   **(b) Encapsulation**   (c) Data hiding   (d) Composition

17. Which of the following can not be used as identifiers?

(a) Letters   (b) Digits   (c) Underscores   **(d) Spaces**

18. Which is correct syntax ?

(a) myfile:open ("example.bin", ios::out);

(b) myfile.open ("example.bin", ios::out);

(c) myfile::open ("example.bin", ios::out);

(d) myfile.open ("example.bin", ios:out);Spaces

19. _____ allows to create classes which are derived from other classes, so that they automatically include some of its "parent's" members, plus its own members.

(a) Overloading   **(b) Inheritance**   (c) Polymorphism   (d) Encapsulation

20. The static member variable is initialized to

(a) 0   (b) 1   (c) 2   (d) -1

21. Which of the following operator cannot be overloaded ?

(a) =   (b) ==   (c) +   **(d) ::**

22. A constructor is called whenever

(a) **an object is declared**

(b) an object is used

(c) a class is declared

(d) a class is used

23. Operator overloading is

(a) making C++ operators work with objects

(b) giving new meaning to existing C++ operators

(c) making new C++ operator

(d) both a and b

24. A destructor takes….. argument/arguments.

(a) 1   (b) 2   (c) 3   **(d) 0**

25. Which function is used to position back from the end of the file object?

(a) seekp( )   **(b) seekg( )**   (c) both seekg & seekp   (d) none of these

26. What does inheritance allows you to do ?

(a) create a class

(b) create a hierarchy of classes

(c) access methods

(d) None of these

27. How many types of inheritance are there in C++ ?

    (a) 2   (b) 3   (c) 4   **(d) 5**

28. The .... access specifier allows functions or data to be accessible to other parts of the program.

    (a) private   (b) protected   **(c) public**   (d) inherited

29. Which header file is used for reading and writing to a file?

    (a) #include<iostream>

    (b) #include<fstream>

    (c) #include<file>

    (d) None of the mentioned

30. A function with the same name as the class, but preceded with a tilde character (~) is called _____ of that class.

    (a) constructor   **(b) destructor**   (c) function   (d) object

Group B

Answer any six questions: **[6x5=30]**

1. Explain cin and cout objects with examples. (unit I: Introduction to computers)
2. What is an automatic variable ? Given an example. (unit I: Introduction to computers)
3. Explain switch statement with an example. (unit II: Control structure)
4. What is a pointer ? Give an example of passing the value using pointer.
   (III: Predefined/library function)
5. Write a program that takes three arguments and declare a default value to the last argument.
   (IV: Function)
6. Write a program to input any ten numbers in an array and find the greatest number. (Unit V: Array)
7. What is multithreading ? (unit VI: Multithreading)
8. Write a program to read the contents of a text file and display them on the screen using appropriate method. (Unit VII: Files and operations)

Group C

Answer any two questions: **[20x2=40]**

9. Define Object Oriented Programming. Explain the features of OOP. Give an example to implement inheritance in C++. (unit I: Introduction to computers)
10. Explain if-else, while loop and for loop with examples. (unit II: Control structure)
11. Explain function. What is function overloading ? Write a program to overload functions with different types of arguments and different number of arguments. (unit IV: Function)

Board Examination, 2018

BIT, First Year, Second Semester Full Marks : 100
Subject : **Introduction to C++ programming** Pass Marks : 40
Set : B Time : 3 hrs

Group A (Multiple Choice Questions)
Select the correct answers: [30x1=30]

1. Which of the following concept of oops allows compiler to insert arguments in a function call if it is not specified?
    (a) Call by value (b) Call by reference **(c) Default arguments** (d) Call by pointer

2. Local Variables can be access ?
    (a) Code block enclosed in braces { }.
    (b) Code block enclosed in bracket ().
    (c) Code block enclosed in square bracket [].
    (d) None of the above

3. How many types of polymorphisms are supported by C++?
    (a) 1 **(b) 2** (c) 3 (d) 4

4. Which of the following is correct about function overloading?
    (a) The types of arguments are different.
    (b) The order of argument is different.
    (c) The number of argument is same.
    (d) Both A and B.

5. Which of the following is the correct class of the object cout?
    (a) iostream **(b)** istream **(c) ostream** (d) ifstream

6. Which of the following statement is correct?
    (a) Class is an instance of object.
    (b) Object is an instance of a class.
    (c) Class is an instance of data type.
    (d) Object is an instance of data type.

7. Which of the following function declaration is/are incorrect?
    (a) *int Sum(int a, int b = 2, int c =3);*
    (b) *int Sum(int a = 5, int b);*
    (c) *int Sum(int a = 0, int b, int c = 3);*
    (d) Both B and C are incorrect.

8. Which of the following statement is correct?
    (a) The order of the default argument will be right to left.
    (b) The order of the default argument will be left to right.
    (c) The order of the default argument will be alternate.
    (d) The order of the default argument will be random.

9. What is the mandatory preprosessor directive for c++?
    (a) #define **(b) #include** (c) #undef (d) none of the mentioned

10. What is the output of this program?
    #include<iostream.h>

```
void main()
{int a;
a = 5 + 3 * 5;
cout << a;}
```
(a) 40   **(b) 20**   (c) 25   (d) 30

11. What is the general syntax for accessing the namespace variable?

(a) namespaceid::operator   (b) namespace,operator

(c) namespace#operator   (d) none of the mentioned

12. What is a array?

(a) An array is a series of elements of the same type in contiguous memory locations.

(b) An array is a series of element

(c) An array is a series of elements of the same type placed in non-contiguous memory locations

(d) None of these

13. What can be used to input a string with blankspace?

(a) inline   **(b) getline**   (c) putline   (d) None of the mentioned

14. Everything defined at the program scope level (ie. outside functions and classes) is said to be ……………

(a) local scope   (b) regional scope   **(c) global scope**   (d) static scope

15. ……………. is the header file listed in C++ standard library that contains function prototypes for the stream manipulators that enable formatting of streams of data.

(a) <iomanip>   (b) <fstream>   (c) <iostream>   (d) <cstdio>

16. In C++ code , variables can be passed to a function by

(a) Pass by value   (b) Pass by reference   (c) Pass by pointer   **(d) All of the mentioned**

17. Which of the following parameter passing mechanism is/are supported by C++ but not in C ?

(a) Pass by value   **(b) Pass by reference**   (c) Pass by pointer   (d) All of the mentioned

18. Which of the following storage classes have global visibility in C++?

(a) Register   (b) Static   (c) Auto   **(d) Extern**

19. In object oriented programming, by wrapping up characteristics and behavior into one unit, we achieve _____.

(a) Data Abstraction   **(b) Data Encapsulation**   (c) Data Hiding   (d) All of the mentioned

20. What will be the output of the following code segment ?

```
char C1 = 'A', C2 = 'D';
char *i, *j;
i = &C1; j = &C2;
*i = j;
```
(a) A   (b) D   (c) AD   (d) None

21. Which of the following operator can be overloaded ?

(a) .   **(b) &**   (c) sizeof   (d) ?.

22. Overload function in C++

(a) **means to have many functions with the same name**

(b) means to have many functions with same number and type of arguments

(c) means to have functions with different names

(d) All of the above

23. The differences between constructors and destructor are

(a) constructors can take arguments but destructor can't

(b) constructors can be overloaded but destructors can't be overloaded

(c) both a and b

(d) None of these

24. The fields in a class of a C++ program are by default

(a) protected   (b) public   **(c) private**   (d) None of these

25. To overload an operator ………………… keyword must be used along with the operator to be overloaded.

(a) over   (b) overload   (c) void   **(d) operator**

26. What is the syntax of inheritance of class ?

(a) class name

(b) class name: access specifier

(c) class name : access specifier class name

(d) None of these

27. ………… is initialized when an object is created.

(a) Constructor   (b) Destructor   (c) Array   (d) Pointer

28. Identify the correct statement regarding scope of variables.

(a) Global variables are declared in a separate file and accessible from any program.

(b) Local variables are declared inside a function and accessible within the function only.

(c) Global variables are declared inside a function and accessible from anywhere in program.

(d) Local variables are declared in the main body of the program and accessible only from functions.

29. Which constructor function is designed to copy objects of the same class type?

(a) default constructor

(b) object constructor

(c) dynamic constructor

(d) copy constructor

30. Which stream class is to only write on files ?

(a) ofstream   (b) ifstream   (c) fstream   (d) iostream

Group B

Answer any six questions: **[6x5=30]**

1. Explain scope resolution operator with an example. (unit I: Introduction to computers)
2. Explain float data type with example. (unit I: Introduction to computers)
3. Explain type casting in C++ with example. (unit I: Introduction to computers)
4. Explain for loop. Write a program to display odd numbers from 1 to 19 using for loop. (unit II: Control structure)
5. Write a program to input length and breadth of a rectangle and find the area of the rectangle using passing by value method. (III: Predefined/library function)
6. Explain the library function strcat() with an example. (IV: Function)
7. Write a program to overload binary operator +. (IV: Function)
8. Write a program to write data in a file using appropriate method. (Unit VII: Files and operations)

Group C

Answer any two questions: **[20x2=40]**

9. Explain selection structure. Write a program that takes marks in five subject and finds out total and percent. The full marks is 100 in each subject. Find grade according to the given criteria: (unit II: Control structure)

    Percent >=90 to 100, A
    Percent>=80 and percent <90, B
    Percent>=70 and percent <80, C
    Percent>=60 and percent <70, D, otherwise E

10. What is a constructor ? Explain default constructor and parameterized constructors with examples. (IV: Function)

11. Explain array. Write a program to input any ten numbers, pass these numbers to a function that returns the total of these numbers. (unit V: Array)