

MASTER OF COMPUTER APPLICATION
SECOND SEMESTER
CONCEPTS OF OOPS
MCA – 202

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(**PART-A: Objective**)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

1. Which component is used to compile, debug and execute the java programs?
 - a. JRE
 - b. JIT
 - c. JDK
 - d. JVM

2. Which of the following is correct about static variables?
 - a. Static functions do not support polymorphism
 - b. Static data members cannot be accessed by non-static member functions
 - c. Static data members functions can access only static data members
 - d. Static data members functions can access both static and non-static data members

3. How run-time polymorphisms are implemented in C++?
 - a. Using Inheritance
 - b. Using Virtual functions
 - c. Using Templates
 - d. Using Inheritance and Virtual functions

4. Which of the following is true about the anonymous inner class?
 - a. It has only methods
 - b. Objects can't be created
 - c. It has a fixed class name
 - d. It has no class name

5. Wrapping data and its related functionality into a single entity is known as
 - a. Abstraction
 - b. Encapsulation
 - c. Polymorphism
 - d. Modularity

6. What does the expression `float a = 35 / 0` return in Java?
 - a. 0
 - b. Not a Number
 - c. Infinity
 - d. Run time exception

7. What is the syntax of overloading operator + for class A?
 - a. `A operator+(argument_list){}`
 - b. `A operator[+](argument_list){}`
 - c. `int +(argument_list){}`
 - d. `int [+](argument_list){}`

8. Explanation: Friend function is not a constructor whereas others are a type of constructor used for object initialization.
Which of the following is correct?
 - a. Base class pointer object cannot point to a derived class object
 - b. Derived class pointer object cannot point to a base class object
 - c. A derived class cannot have pointer objects
 - d. A base class cannot have pointer objects

9. What is the output of below program?
- ```
int main()
{
int a = 10;
cout<<a++;
return 0;
}
```
- a. 10  
b. 11  
c. 12  
d. Not Defined
10. Pick out the correct statement.
- A derived class's constructor cannot explicitly invokes its base class's constructor
  - A derived class's destructor cannot invoke its base class's destructor
  - A derived class's destructor can invoke its base class's destructor
  - A derived class's destructor can invoke its base & derived class's destructor
11. Which of these statement is incorrect?
- Every class must contain a main() method
  - Applets do not require a main() method at all
  - There can be only one main() method in a program
  - main() method must be made public
12. What happens when objects s1 and s2 are added?
- ```
string s1 = "Hello";
string s2 = "World";
string s3 = (s1+s2).substr(5);
```
- Error because s1+s2 will result into string and no string has substr() function
 - Segmentation fault as two string cannot be added in C++
 - The statements runs perfectly
 - Run-time error
13. Which of these Exceptions is thrown by loadClass() method of ClassLoader class?
- IOException
 - SystemException
 - ClassFormatError
 - ClassNotFoundException
14. Which of the following is called insertion/put to operator?
- <<
 - >>
 - >
 - <
15. Which option is false about the final keyword?
- A final method cannot be overridden
 - A final class cannot be extended in its subclasses.
 - A final class cannot extend other classes
 - A final method can be inherited
16. What is the size of empty class in C++?
- 0
 - 1
 - 2
 - 4

17. An interface with no fields or methods is known as a _____.
- a. Runnable Interface
 - b. Marker Interface
 - c. Abstract Interface
 - d. CharSequence nterface
18. Which operator cannot be overloaded?
- a. +
 - b. -
 - c. *
 - d. ::
19. Pick the correct statement.
- a. Pure virtual functions and virtual functions are the same
 - b. Both Pure virtual function and virtual function have an implementation in the base class
 - c. Pure virtual function has no implementation in the base class whereas virtual function may have an implementation in the base class
 - d. The base class has no pure virtual function
20. Which package contains the Random class?
- a. java.util package
 - b. java.lang package
 - c. java.awt package
 - d. java.io package

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Write about the features of Object Oriented Programming. 10
Analysis the special features of Java programming over C++
(If any).
2. Write a C++ program add two complex numbers using operator 2+8=10
overloading.
3. What is inheritance? Explain the need of inheritance with 2+5+3
suitable examples. What is difference among the access =10
specifiers private, protected and public?
4. What is polymorphism? Explain it with categories. Show the use 4+4+2
of virtual function with example. Define abstract class =10
5. What is constructor and destructor? Write the characteristics of 3+5+2
constructor and destructor. Compare the constructor and =10
destructor in java and C++.
6. Define stream. How can we read user defined values from 3+3+4
standard input devices? Explain any one method with example =10
7. Define with categories of interface, and inheritance in java. What 5+5=10
is the role of inheritance in programming language?
8. What is exception? Why it is necessary for programming. Write 2+8=10
a java programme to input two distances.

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[4]