[Established by Govt. of Kerala]

C++ / Java
(DCA)

Time: 2 hours   **Maximum Marks: 100**

Note: Write the answers for Questions from 1 to 35 in the MCQ answer sheet

Part I   Choose the most appropriate answer   (15 x 1 Mark = 15 Marks)

1) Wrapping up of data and functions into a single unit is called ....

   a) Inheritance   b) Function   c) Encapsulation   d) Polymorphism

2) Iteration structure is also called......................

   a) Jumping statement   b) Decision statement   c) Function statement   d) Looping statement

3) The statement i++ is equivalent to......................

   a) i=i+2   b) i=i+1   c) i= i+i   d) i=i+(i+1)

4) What would be the value of **x** after execution of the following lines?

   ```
   a=2;
   b=7;
   x = (a>b) ?  a : b;
   ```

   a) 2   b) 0   c) 7   d) Error

5) A function can return a maximum of .... values.

   a) 1   b) 2   c) 256   d) any number

6) Which of the following control expressions are valid for an **if** statement?

   a) An integer statement   b) A Boolean expression   c) Either a or b   d) Neither a nor b

7) The expression 21 % 8 evaluates to ....

   a) 1   b) 0   c) 5   d) 2

8) Function name always ends with ....

   a) Semicolon   b) Pair of braces   c) Colon   d) Parenthesis

9) Which of the following statement is correct?

   a) Integer a,b;   b) int a,b   c) float e,f = 3.0;   d) float e=2.17, f=3.0

10) Class is …………. data type.

   a) User defined   b) Derived   c) Basic   d) Predefined

11) The dynamic allocation of a variable is done at …………………

   a) Compile time   b) Run time   c) Both a & b   d) All of these

12) A method that calls itself is said to be ………………

   a) Inline function   b) friend function   c) Recursion   d) Overloaded function

13) The …………. loop has built in features to include an initialization statement and an increment statement.

   a) for   b) do….while   c) while   d) All of these

14) Which of the following is not a correct variable type?

   a) float   b) real   c) int   d) double

15) What will be the value of '**b**' after execution of the following lines?

   ```
   a=10;
   b=a++;
   ```

   a) 11   b) 10   c) 12   d) None of these

Part II   State whether true or false   (10 x 1 Mark = 10 Marks)

16) The modulus operator (%) can be used only with integer operands.

17) Declarations can appear anywhere in the body of C++ and Java methods.

18) A constructor must always invoke its super class constructor in its first statement.

19) Any method in super class can be overridden in its subclass.

20) Inheritance provides reusability of code.

21) Building functions and data together is known as data hiding.

22) Object of the string class can be copied with the assignment operator.

23) A static function can be invoked using its class name and function name.

24) Two functions cannot have the same name.

25) Relational operators have a higher precedence than arithmetic operators.

Part III   Fill in the blanks   (10 x 1 Mark = 10 Marks)

26) JDBC stands for.................

27) A derived class with only one base class is called   .... inheritance.

28) The .... statement is used to exit from a loop.

29) The .... loop executes atleast one time.

30) Exception handling is used to handle .... error.

31) A ………………. is a variable that holds memory address.

32) .... function is used to access the private member of a class by the non member function.

33) The smallest unit of a program is called................

34) .... sign is used for the inline comment.

35) …………… variable is visible at any point of the code inside and outside of all functions.

Part - IV Answer the following (Any Seven)   (7 x 5 Marks = 35 Marks)

36) Write a program to calculate the volume of a sphere given its radius using function.(volume of a sphere = $4/3\pi r^3$; r is the radius; π=3.14)

37) Write a program to accept 10 numbers into an array and print the numbers and their sum.

38) What are the 3 visibility modifiers? Explain.

39) Explain the data types.

40) Difference between call by reference and call by value.

41) Difference between constructor and destructor.

42) Define Class and Object with examples.

43) What is meant by a variable? Give the syntax for declaring & initializing variables.

44) What is an array? Explain different types of arrays.

Part- V   Answer the following   (Any Three)   (3 x 10 Marks = 30 Marks)

45) What are the Different types of **loop** statements, write their syntax and explain with examples.

46) Explain any **five** string library functions with examples.

47) Explain various operators.

48) Write a menu driven program to input a number between 0 & 6 and to display the corresponding week day (using switch …….case).

49) Explain function overloading with a suitable example.

50) What is exception? Write a program to manage Arithmetic Exception.

51) Explain the different features of object oriented programming.