

**BACHELOR OF COMPUTER APPLICATION**  
**Third Semester**  
**Object Oriented Programming with C++**  
**(BCA - 11)**

**Duration: 3Hrs.**

**Full Marks: 70**

**(PART-B: Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**1. Answer the following questions (any five)**

**5×2=10**

- a) What is the main advantage of passing arguments by reference?
- b) When will you make a function inline? Why?
- c) What is a class? How does it accomplish data hiding?
- d) What is a constructor? How do we invoke a constructor function?
- e) What is operator overloading? Explain.
- f) What does inheritance mean in c++?
- g) What is an exception? How is an exception handled in c++?

**2. Answer the following questions (any five)**

**5×3=15**

- a) What is a friend function? What is its use?
- b) What are static data members and static member functions? Explain.
- c) What do you mean by dynamic initialization of objects? Why do we need to do this?
- d) What is a virtual base class? When do we make a class virtual?
- e) What does polymorphism mean in c++ language? How is polymorphism achieved at  
i) compile time and ii) run time
- f) What is a file mode? Describe the various file mode options available.
- g) What should be placed inside a try and catch block? Explain.

**3. Answer the following questions (any five)**

**5×5=25**

- a) We know that a private member of a base class is not inheritable. Is it anyway possible for the objects of a derived class to access the private members of the base class? Explain.
- b) What does the “current position” mean when applied to files? Write statements using seekg() to achieve the following.
  - i) To move the pointer by 15 positions backward from the current position.
  - ii) To go to the beginning after an operation is over.
  - iii) To go backward by 20 bytes from the end.
- c) Write a C++ program to write 10 student records into a file.
- d) Write a program containing a possible exception. Use a 'try' block to throw it and a 'catch' block to handle it.
- e) Explain with an example, how you would create space for an array of objects using pointers.
- f) What are the different forms of inheritance? Give an example of each.
- g) Explain how “runtime polymorphism” is achieved in C++ with an example.

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*(The figures in the margin indicate full marks for the questions)*

**Duration: 20 minutes**

**Marks – 20**

**PART A- Objective Type**

**1. Select the correct answer:**

**1×20= 20**

1. Which allows you to create a derived class that inherits properties from more than one base class?

- a) Multilevel inheritance
- b) Multiple inheritance
- c) Hybrid Inheritance
- d) Hierarchical Inheritance

2. Which feature in OOP allows reusing code?

- a) Polymorphism
- b) Inheritance
- c) Encapsulation
- d) Data hiding

3. What does C++ append to the end of a string literal constant?

- a) a space
- b) a number sign (#)
- c) an asterisk (\*)
- d) a null character

4. An array element is accessed using

- a) a first-in-first-out approach
- b) the dot operator
- c) a member name
- d) an index number

5. To hide a data member from the program, you must declare the data member in the \_\_\_\_\_ section of the class

- a) concealed
- b) confidential
- c) Chidden
- d) private
- e) restricted

6. The function whose prototype is `void get Data (Item *thing);` receives
- a) a pointer to a structure
  - b) a reference to a structure
  - c) a copy of a structure
  - d) nothing
7. Null character needs a space of
- a) zero bytes
  - b) one byte
  - c) three bytes
  - d) four bytes
8. The following statement where T is true and F is false `T&&T||F&&T`
- a) is true
  - b) is false
  - c) is wrong
  - d) not applicable in C language
9. The standard input stream, which refers to the keyboard, is called
- a) cin
  - b) cout
  - c) stin
  - d) stout
10. Elements in an array are identified by a unique \_\_\_\_\_
- a) data type
  - b) order
  - c) subscript
  - d) symbol
11. The statement `write (char*)&obj1, sizeof(obj1) );`
- a) writes the member functions of obj1 to fl
  - b) writes the data in obj1 to fl
  - c) writes the member functions and me data of obj 1 to fl
  - d) writes the address of obj1 to fl
12. The body of a C++ function is surrounded by \_\_\_\_\_
- a) parentheses
  - b) angle brackets
  - c) curly brackets
  - d) square brackets
13. Which of the following, if any, are valid names for variables?
- a) class
  - b) friend
  - c) #OnHand
  - d) void
  - e) None of the above is valid names for variables
14. Which of the following concepts means determining at runtime what method to invoke?
- a) Data hiding
  - b) Dynamic Typing
  - c) Dynamic binding
  - d) Dynamic loading
15. Which of the following is an abstract data type?
- a) int
  - b) double
  - c) string
  - d) class

16. 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

17. Which of the following concepts means wrapping up of data and functions together?

- a) Abstraction
- b) Encapsulation
- c) Inheritance
- d) Polymorphism

18. Which of the following functions are performed by a constructor?

- a) Construct a new class
- b) Construct a new object
- c) Construct a new function
- d) Initialize objects

19. Which of the following problem causes an exception?

- a) Missing semicolon in statement in *main ()*
- b) A problem in calling function
- c) A syntax error
- d) A run-time error

20. Which one of the following options is correct?

- a) Friend function can access public data members of the class.
- b) Friend function can access protected data members of the class.
- c) Friend function can access private data members of the class.
- d) All of the above.

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