B.E./B.TECH. DEGREE EXAMINATIONS: OCTOBER/NOVEMBER - 2008

Third Semester

U07CS304 OBJECT ORIENTED PROGRAMMING & C++

(Common to B.E. Computer Science and Engineering & B. Tech Information Technology Branches)

Time: Three hours   **Maximum Marks: 100**

Answer ALL Questions: -

PART A (20 x 1 = 20 Marks)

1. The act of representing important features without detailed explanations is
   A. Encapsulation   B. Inheritance   C. Abstraction   D. Polymorphism

2. Which of the following feature is not supported by C++?
   A. Polymorphism   B. Data hiding   C. Garbage Collection   D. Persistence

3. The header file containing the function prototypes for manipulating the time and date is
   A. time.h   B. assert.h   C. iterator.h   D. locale.h

4. The return type of main() function in C is
   A. void   B. int   C. float   D. char

5. The C++ symbol <<
   A. performs the action of sending the value of expression listed as its right to the output stream as the left.
   B. is used to indicate the action from right to left
   C. is adopted to resemble an arrow
   D. All the above.

6. Pointers are of ------------ data type
   A. Basic   B. Derived   C. User defined   D. Symbolic

7. Memory deferencing operator is
   A. ::   B. ::*   C. new   D. delete

8. The function which eliminate the cost of calling small functions is
   A. Macro   B. Friend   C. Inline   D. virtual

9. Which of the following type of members allows maintaining values across the objects.
   A. const   B. friend   C. public   D. static

10. The function that can not be overloaded is
    A. virtual   B. Constructor   C. Destructor   D. friend

11. 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

12. An array declared int A[100] is to be passed as a parameter to a function. Which of the following may not be used to declare the function's formal parameter?
    A. int *P   B. int P[50]   C. int P[100]   D. int P[int]

13. Which of the following operator can not be overloaded using friend function alone.
    A. new   B. delete   C. ?:   D. ->

14. The class that can not be used to create objects is
A. virtual   B. final   C. abstract   D. static

15. If an object of a class contains objects of another class, then such a relation is said to be
A. Aggregation   B. Association   C. Containership   D. Composition

16. Overloaded function in C++ is
A. a group function with the same name
B. all have the same number and type of arguments
C. functions with same name and same number and type of arguments
D. all the above

17. Find the output of the following
```
cout.precision(3);
cout << sqrt(5);
cout.precision(4);
cout<<sqrt(7);
```
A. 2.237, 2.6457   B. 2.236, 2.6450   C. 2.237,2.6458   D. 2.236, 2.6458

18. The data type of command line arguments include
A. char, char *   B. char *, char   C. int, char *   D. char *, int

19. Parameterized classes are also called as
A. Static classes   B. Friend classes   C. Templates   D. Overloaded classes

20. seekg() is used to
A. position the get pointer at the required byte
B. know the current position of the get pointer.
C. position the put pointer at the required byte
D. know the current position of the put pointer.

PART B (5 x 16 = 80 marks)

21. (a) (i) Write in detail about the features of object oriented programming   (10)

        (ii) List the advantages of OOPS.   (6)

(OR)

(b) (i) With suitable example, explain the structure of a C++ program   (8)

    (ii) Give a comparison on characteristics of OOPS languages   (8)

22. (a) (i). Explain the data types supported in C++ with examples. Provide the size and range of the basic data types also.   (8)

    (ii). Write a program in C++ to evaluate the following series   (8)
$$1/(1)^1 + 1/(2)^2 + \ldots \ldots 1/(n)^n$$

(OR)

(b) (i). Write a C++ program using function overloading to add 2 numbers of different data types.   (8)

    (ii) What are different parameter passing mechanisms in C++? Explain each with example.   (8)

23. (a) (i) What is copy constructor? Explain it with suitable C++ coding. (8)

(ii) Write a C++ program to extract the elements placed in the odd position of the array. (8)

(OR)

(b) (i) Write a program in C++ to count the number of objects created in a program. use static members. (8)

(ii) With suitable examples, write about the constructors with default arguments. (8)

24. (a) (i) Write a program to perform arithmetic operations on complex numbers using operator overloading. (10)

(ii) Write about the forms of inheritance supported by C++. (6)

(OR)

(b) Create a base class called "account" that keeps the name, account number and type of the account. From this class derive two classes namely "current_account" and "savings_account" to make more specific to their requirements. The current account holders should maintain a minimum balance otherwise a penalty will be imposed. Only savings account provides compound interest. Write a program in C++ that performs the following tasks:

i. Accept deposit and withdrawal and update the balance accordingly
ii. Display the balance
iii. Compute and deposit the interest
iv. Check for the minimum balance and impose penalty. (16)

25. (a) Write a C++ program to calculate are of different geometrical figures using virtual functions (16)

(OR)

(b) (i) Write a program to write text in a file. Read the text from the file from the end of the file. Display the contents of the file in reverse order. (8)

(ii) Discuss in detail about the exception handling mechanism in C++ (8)

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