B.E.(Computer Science & Engineering) Semester Fifth (C.B.S.)

Object Oriented Programming

P. Pages : 2 **KNT/KW/16/7350**

Time : Three Hours * 0 6 5 6 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data wherever necessary.

1. a) What is object oriented programming? How is it different from the procedure oriented programming? **6**

b) Distinguish between the following terms: **8**

i) Object and Classes

ii) Data Abstraction and data encapsulation

iii) Inheritance and Polymorphism

iv) Dynamic binding and message passing.

OR

2. a) What is constructor? State properties of constructor. Also explain different types of constructor along with example. **8**

b) Write a C++ program to find sum of digits of four digit number. **6**

3. a) What is operator overloading? Explain overloading of unary and binary operators with suitable example. **10**

b) What are the pitfalls of operator overloading? **3**

OR

4. a) Explain the new operator with suitable example. **6**

b) An election is contested by five candidates. The candidates are numbered from 1 to 5 and the voting is done by marking the candidate number on the ballot paper. WAP to read the ballots and count the votes cast for each candidate using an array variable count. If no. read is outside the range 1 to 5 the ballot should be considered as a 'spoilt ballot', and the program should also count the number of spoilt ballots. **7**

5. a) What is meant by Inheritance? What are different types of Inheritance Explain Multilevel inheritance with an example. **13**

OR

6. a) What is containership or classes within classes? Explain with suitable example. **7**

b) Explain function overloading with an example. **6**

7.	a)	Create two classes DM and DB which stores the value of distances. DM stores distance in meters and centimeters and DB stores distances in feet and inches. write a program that can read values for the class objects and add one object of DM with another object of DB. Use a friend function to carry out addition operation. The object that stores the result may be in DM object or DB object, depending on the units in which results are required. The display should be in the format of feet and inches or meters and centimeters depending on the object on display.	**7**
	b)	What are the applications of 'this' pointer?	**3**
	c)	When do we make a class virtual?	**4**
		OR	
8.	a)	When do we make a virtual function "pure"? What are the implications of making a function a pure virtual function?	**4**
	b)	How static member variables are initialized? How are static members i. e. member variables are accessed?	**4**
	c)	What is static function and dynamic type information?	**6**
9.	a)	How do the I/O facilities in C++ differ from that in C?	**5**
	b)	Discuss the various forms of get () function supported by the input stream. How are they used?	**5**
	c)	What role does the iomanip () file play?	**3**
		OR	
10.	a)	Write a program that reads a text file and creates another file that is identical except that every sequence of consecutive blank spaces is replaced by a single pace.	**7**
	b)	Discuss formatted and unformatted I/O with suitable example.	**6**
11.	a)	What is the need of template function in C++? write a function template for the minimum value contained in an array.	**8**
	b)	Explain why do we need multiple catch blocks for a single try block? Give an example.	**5**
		OR	
12.	a)	What should be placed inside try and catch blocks?	**4**
	b)	Write short notes on **any three.** i) Associative containers ii) Standard Template Library iii) Specialized Interates iv) Function objects.	**9**

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