

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2017
CA5EL01 Object Oriented Programming Paradigm

Programme: MCA Branch/Specialisation: Computer Application

Duration of Test: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. General syntax for accessing the namespace variable is **1**
(a) Namespaceid::operator (b) Namespace,operator
(c) Namespace#operator (d) None of these
- ii. Which of the following type of class allows only one object of it to be created? **1**
(a) Virtual class (b) Abstract class
(c) Singleton class (d) Friend class
- iii. Which of the following is not a type of constructor? **1**
(a) Parameterized constructor (b) Default constructor
(c) Friend constructor (d) Copy constructor
- iv. Which of the following is an abstract data type? **1**
(a) Int (b) Double (c) String (d) Class
- v. How many types of polymorphisms are supported by C++? **1**
(a) 1 (b) 2 (c) 3 (d) 4
- vi. Which of the following concepts means determining at runtime what method to invoke? **1**
(a) Data hiding (b) Dynamic Typing
(c) Dynamic binding (d) Dynamic loading
- vii. Where are allocators implemented? **1**
(a) Standard library (b) C++ code library
(c) None of these (d) Template library
- viii. Which operator is used to allocate the memory? **1**
(a) = (b) + (c) New (d) Free

P.T.O.

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- ix. Which of the following is not a file opening mode **1**
(a) ios::ate (b) ios::nocreate
(c) ios::noreplace (d) ios::truncate
- x. Return type of is_open() function is **1**
(a) Int (b) Boolean (c) Float (d) Char *
- Q.2 i. What are the unique advantages of an object-oriented programming paradigm? **2**
ii. Write a program to check whether the given number is palindrome or not. Supplement it with Algorithm and Flowchart. **8**
- OR iii. Write note on the following illustrating example: **8**
(a) Pointers (b) Structure (c) Expression (d) Function
- Q.3 i. Write a program to overload ++ operator to increment age of person by one month. **3**
ii. Elaborate difference between explicit and implicit conversion with example. Write a C++ program to illustrate function overloading. **7**
- OR iii. Describe Constructors and Destructors in C++. What are different types of Constructors available in C++? Write a C++ program to demonstrate the use of Constructor/ Destructor. **7**
- Q.4 Attempt any two :
i. Write a Program to demonstrate the virtual base class. **5**
ii. Write a Program to demonstrate use of polymorphism. **5**
iii. Write a program to illustrate the use of scope resolution operator. **5**
- Q.5 i. Why are function objects more powerful than regular functions? **2**
ii. What will be the outcome of this program? **3**
- ```
#include <iostream>
#include <memory>
#include <algorithm>
using namespace std;
int main ()
{
 int numbers[] = {1, 5, 4, 5};
```

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- ```
pair <int*, ptrdiff_t> result = get_temporary_buffer<int>(4);
if (result.second > 0)
{
    uninitialized_copy (numbers, numbers + result.second,
result.first);
    sort (result.first, result.first + result.second);
    for (int i = 0; i < result.second; i++)
        cout << result.first[i] << " ";
    return_temporary_buffer (result.first);
}
return 0;
```
- iii. Write a template function CapAtValue that accepts a range of iterators and a value by reference-to-const and replaces all elements in the range that compare greater than the parameter with a copy of the parameter. **5**
- OR iv. Differentiate between Iterators and Allocators. Write program in C++ to demonstrate Iterators. **5**
- Q.6 i. Write note on (with example): **3**
(a) Try Blocks (b) Exception
- ii. Write a C++ program that includes two functions: **7**
(a) Function **Compare** has 3 parameters: 2 input streams and 1 output stream. The function reads the characters from each of the two inputs. If the sequences of characters are exactly the same, it writes "equal" to the output stream; otherwise, it writes "not equal".
(b) Function **main** opens the files "Input1" and "Input2" for reading (giving an appropriate error message and quitting if either open fails), then calls Compare, passing the two input files as well as the standard output.
- OR iii. Differentiate between Ostream and Istream. Write a function in C++ to count the number of uppercase alphabets present in a text file "Document.TXT". **7**

CA5EL01 Object Oriented Programming Paradigm

Marking Scheme

Q.1	i.	General syntax for accessing the namespace variable is (a) Namespaceid::operator	1	OR	ii.	3 marks for explicit and implicit conversion 1 mark for header file & standard function 3 marks for program logic	7
	ii.	Which of the following type of class allows only one object of it to be created? (c) Singleton class	1		iii.	1 mark for defining Constructors 1 mark for defining Destructors 2 marks for different types of Constructors 3 marks for program	7
	iii.	Which of the following is not a type of constructor? (c) Friend constructor	1	Q.4		Attempt any two :	
	iv.	Which of the following is an abstract data type? (d) Class	1		i.	5 marks for program.	5
	v.	How many types of polymorphisms are supported by C++? (b) 2	1		ii.	5 marks for program.	5
	vi.	Which of the following concepts means determining at runtime what method to invoke? (c) Dynamic binding	1		iii.	5 marks for program.	5
	vii.	Where are allocators implemented? (a) Standard library	1	Q.5	i.	1 marks for writing about object 1 mark for writing about reg. function	2
	viii.	Which operator is used to allocate the memory? (c) New	1		ii.	3 marks for whole output -> Output 1,4,5,5	3
	ix.	Which of the following is not a file opening mode (d) ios::truncate	1		iii.	3 marks for template function 2 marks for remaining logic	5
	x.	Return type of is_open() function is (b) Boolean	1	OR	iv.	3 marks for difference between Iterators and Allocators 2 marks for program	5
Q.2	i.	2 marks for writing advantages	2	Q.6	i.	Note (with example): 1.5 marks for each (1.5 mark * 2 = 3 marks) (a) Try Blocks (b) Exception	3
	ii.	2 marks for Algorithm 3 marks for Flowchart 3 marks for Program	8		ii.	Write a C++ program that includes two functions: (a) 3.5 marks for writing logic (b) 3.5 marks for writing logic	7
OR	iii.	Note on the following illustrating example: 2 marks for each (a) Pointers (b) Structure (c) Expression (d) Function	8	OR	iii.	4 marks for defining streams 3 marks for counting uppercase alphabets. *****	7
Q.3	i.	1 mark for header file & standard function 2 marks for program	3				