Enrollment No......................................

Faculty of Engineering
End Sem Examination Dec-2023
CB3CO04 Object Oriented Programming
Programme: B.Tech.   Branch/Specialisation: CSBS

Duration: 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.   What are mandatory parts in function declaration?   **1**
       (a) Return type, function name
       (b) Return type, function name, parameters
       (c) Parameters, function name
       (d) None of these

   iii.   In C++, cin and cout are the predefined stream: **1**
       (a) Operator   (b) Functions   (c) Objects   (d) Data types

   iv.   Encapsulation and abstraction differ as _____.   **1**
       (a) Hiding and hiding respectively
       (b) Binding and Hiding respectively
       (c) Hiding and Binding respectively
       (d) Can be used any way

   v.   Which of the following is not a type of constructor?   **1**
       (a) Parameterized constructor
       (b) Default constructor
       (c) Friend constructor
       (d) Copy constructor

   vi.   If constructor is not defined, then how the objects of the class will be created?   **1**
       (a) The compiler will generate error
       (b) Error will occur at run-time
       (c) Compiler provides its default constructor to build the object.
       (d) None of these

vii.	How many types of polymorphisms are supported by C++?	**1**	

(a) 1   (b) 2   (c) 3   (d) 4

viii. A derived class with several base classes is: **1**
(a) Multilevel inheritance   (b) Multiple inheritance
(c) Hierarchical inheritance   (d) Single inheritance

ix. The stream that supplies data to the program is _____. **1**
(a) Output stream   (b) Input stream
(c) Both (a) and (b)   (d) None of these

x. Which keyword can be used in template? **1**
(a) typename   (b) class
(c) Both (a) and (b)   (d) None of these

Q.2 i. What are the disadvantages of procedural programming? **2**
ii. What are pre-processor directives in C? Explain with example. **3**
iii. What is control flow? Write in detail various control structures. **5**
OR iv. Differentiate between procedural oriented programming and object oriented programming paradigm. **5**

Q.3 i. Differentiate between inline function and macro in C++. **2**
ii. What are member functions? Differentiate between call by value and call by reference with example. **8**
OR iii. What is object oriented programming? Explain its features with example. **8**

Q.4 i. Write note on (with example): **3**
(a) Scope resolution operator
(b) Exception handling
ii. Describe constructors and destructors in C++. Write a C++ program to demonstrate the use of constructor & destructor. **7**
OR iii. Describe the characteristics of friend function. Write a program to illustrate the concept of friend function. **7**

Q.5 i. What is binding? Differentiate between static and dynamic binding. **4**
ii. What are the different types of inheritance in C++ with suitable example? **6**
OR iii. Explain the concept of overloading. Differentiate between function and operator overloading. **6**

Q.6 Attempt any two:
i. Draw a sequence diagram for the following scenario - Getting on a flight. Start at home, check in at the counter, go through security, and end up at the gate. (If you have time during the exercise, get yourself to your seat.) **5**
ii. Simulate in Activity Diagram a situation for Students who wish to take admission in Medi-Caps University, Indore. The system begins when students passing their qualifying exam register into the system. Upon verification of valid documents and allotment of vacant seats (out of total seats in a branch) for a discipline, the student is enrolled in a class. The system ends with generation of enrollment number of the student. Assume all fields necessary for registering in the system on your own. **5**
iii. How file operations are handled in C++? Discuss the classes used for file operations. **5**

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Scheme of Marking

Object Oriented Programming-CB3CO04(T)

Q.1	i)	(a) Namespaceid::operator		**1**
	ii)	(a) Return type, function name		**1**
	iii)	(c) Objects		**1**
	iv)	(b) Binding and Hiding respectively		**1**
	v)	(c) Friend constructor		**1**
	vi)	(c) Compiler provides its default constructor to build the object.		**1**
	vii)	(b) 2		**1**
	viii)	(b) Multiple inheritance		**1**
	ix)	(b) Input stream		**1**
	x)	(c) Both (a) and (b)		**1**

Q.2	i.	Disadvantages of procedural programming	(1 Marks *2)	**2**
	ii.	What are pre-processor directives in C?	2 Marks	**3**
		Example	1 Mark	
	iii.	What is control flow?	2 Marks	**5**
		Three control structures	(1 Marks *3)	
OR	iv.	At least 5 points 1 mark for each	(1 Mark * 5)	**5**

Q.3	i.	Differentiate	(1 Mark * 2)	**2**
	ii.	Member functions	2 Marks	**8**
		Differentiate	6 Marks	

OR	iii.	What is object oriented programming?	2 Marks	**8**
		OOP features with example	(1 Mark*6)	
Q.4	i.	(a) Scope Resolution Operator	1.5 Marks	**3**
		(b) Exception Handling	1.5 Marks	
	ii.	Defining constructors	1.5 Marks	**7**
		Defining destructors	1.5 Marks	
		Program	4 Marks	
OR	iii.	Characteristics of friend function	4 Marks	**7**
		Program	3 Marks	
Q.5	i.	What is binding?	2 Marks	**4**
		Difference	(1 Mark *2)	
	ii.	At least 4 types of inheritance	(1.5 Marks *4)	**6**
OR	iii.	Concept of overloading	2 marks	**6**
		Differentiate …….overloading.	4 marks	
Q.6		Any two:		
	i.	Draw …… scenario	(As per the explanation)	**5**
	ii.	Diagram	3 Marks	**5**
		As per explanation	2 Marks	
	iii.	file operations are handled in C++	2 Marks	**5**
		Classes used for file operations	3 Marks	

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