

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2019
CS3CO23/IT3CO19 Object Oriented Programming
Programme: B.Tech. Branch/Specialisation: CS/IT

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. You can use C++ as a procedural, as well as an object-oriented, language. 1
 (a) True (b) False (c) May be (d) None of these
- ii. Which of the following approach is adapted by C++? 1
 (a) Top-down (b) Bottom-up
 (c) Right-left (d) Left-right
- iii. Which of the following is not the member of class? 1
 (a) Static Function (b) Friend Function
 (c) Const Function (d) Virtual Function
- iv. Which of the following statement is correct? 1
 (a) A constructor is called at the time of declaration of an object.
 (b) A constructor is called at the time of use of an object.
 (c) A constructor is called at the time of declaration of a class.
 (d) A constructor is called at the time of use of a class.
- v. Which is not the type of relationship among classes: 1
 (a) Association (b) Inheritance
 (c) Aggregation (d) Message passing
- vi. Which relationship exists in the statement, “An engine is the part of the car”. 1
 (a) Association (b) Aggregation
 (c) Composition (d) Realization
- vii. An object is bound to its function call at compile time known as 1
 (a) Early binding (b) Compile time polymorphism
 (c) Static binding (d) All of these

P.T.O.

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- viii. Which among the following can restrict class members to get inherited? **1**
 (a) Private (b) Protected (c) Public (d) All of these
- ix. What is the use of IO class? **1**
 (a) To handle all the input operations
 (b) To handle all the output operations
 (c) To handle all the input and output operations
 (d) To handle all the input and output to the standard input
- x. A class defined within another class is: **1**
 (a) Nested class (b) Inheritance
 (c) Containership (d) Encapsulation
- Q.2 i. What is encapsulation? **2**
 ii. Write any three differences between procedure oriented and object-oriented programming? **3**
 iii. What is object-oriented paradigm? Explain the various features of OO paradigm? **5**
- OR iv. What do you mean by abstraction and polymorphism? Write one example for each one? **5**
- Q.3 i. What is constructor? Is it mandatory to use constructor in a class for object instantiation? List some of the special properties of the constructors. **4**
 ii. What are static and dynamic objects? Show their lifetime and scope with the help of a program. **6**
- OR iii. What are global & local objects? Show their lifetime & scope with the help of a program. **6**
- Q.4 i. What is recursive association? Illustrate with real world example? **3**
 ii. What is Association and Aggregation? Write a program to demonstrate the association and aggregation? **7**
- OR iii. What is relationship? Explain the terms composition, delegation, multiplicities, navigability and named association with real world examples? **7**

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- Q.5 i. What is inheritance? Can we allow the reusability concept through inheritance? Illustrate with example? **4**
 ii. Explain the concept of static and dynamic binding with an example? **6**
- OR iii. What is operator overloading? Write a program to demonstrate the method overloading concept? **6**
- Q.6 Attempt any two:
 i. What are template classes and template functions? Write a program for template class. **5**
 ii. Define Container? What is the use of container? Write a program for defining the container? **5**
 iii. What is I/O operation? Explain the various methods of performing formatted stream I/O operations. **5**

Marking Scheme

CS3CO23/IT3CO19 Object Oriented Programming

Q.1	i.	You can use C++ as a procedural, as well as an object-oriented, language.		1
		(a) True		
	ii.	Which of the following approach is adapted by C++?		1
		(b) Bottom-up		
	iii.	Which of the following is not the member of class?		1
		(b) Friend Function		
	iv.	Which of the following statement is correct?		1
		(a) A constructor is called at the time of declaration of an object.		
	v.	Which is not the type of relationship among classes:		1
		(d) Message passing		
	vi.	Which relationship exists in the statement, “An engine is the part of the car”.		1
		(c) Composition		
	vii.	An object is bound to its function call at compile time known as		1
		(d) All of these		
	viii.	Which among the following can restrict class members to get inherited?		1
		(a) Private		
	ix.	What is the use of IO class?		1
		(c) To handle all the input and output operations		
	x.	A class defined within another class is:		1
		(a) Nested class		
Q.2	i.	Define encapsulation (As per explanation)	2 marks	2
	ii.	Three differences between procedure oriented and object-oriented programming	(1 mark*3)	3
	iii.	Definition object-oriented paradigm	1 mark	5
OR		8- features of OO paradigm	(0.5 mark*8)	
	iv.	Define abstraction with example	2.5 marks	5
		Polymorphism with example	2.5 marks	
Q.3	i.	Define constructor	1 mark	4
		Is it mandatory.....?	1 mark	
		List special properties of the constructors.	2 marks	
	ii.	Static and dynamic objects	1.5 marks	6
		Show their lifetime	1.5 marks	
		Program.	3 marks	

OR	iii.	Definition	3 marks	6
		Program	3 marks	
Q.4	i.	Define recursive association	1.5 marks	3
		Illustrate with real world example	1.5 marks	
	ii.	Define Association and Aggregation	3 marks	7
		Program to demonstrate the association and aggregation	4 marks	
OR	iii.	Define relationship	2 marks	7
		Explain with example composition, delegation, multiplicities, navigability and named association.	5 marks	
Q.5	i.	Define inheritance	1 mark	4
		Can we allow the reusability.....?	1 mark	
		Illustrate with example	2 marks	
	ii.	Static with an example	3 marks	6
		Dynamic binding with an example	3 marks	
OR	iii.	Define operator overloading	2 marks	6
		Program for method overloading	4 marks	
Q.6		Attempt any two:		
	i.	Template classes	1 mark	5
		Template functions	1 mark	
		Program	3 marks	
	ii.	Define Container	2 marks	5
		Use of container	1 mark	
		Program for defining the container	2 marks	
	iii.	Define I/O operation	2 marks	5
		Formatted stream I/O operation method	3 marks	
