(Following Paper ID a	nd Roll No.	to be filled	d in your	Answe	r Book)
PAPER ID: 2706	Roll No.	als alger	414	112	
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B. Tech.

(SEM. VII) THEORY EXAMINATION 2011-12

OBJECT ORIENTED SYSTEMS AND C++

Time: 3 Hours

Total Marks: 100

- Note: (i) Attempt all questions.
 - (ii) Make necessary assumptions if necessary.
- 1. Answer any two parts:

 $(10 \times 2 = 20)$

- (a) (i) What do you mean by object modeling technique? Explain. Discuss the various stages of the object modeling techniques with some example.
- (ii) What do you understand by encapsulation? Describe with an example.
- modeling of aggregation using suitable example and a block diagram.
 - (ii) What do you mean by modeling? What are the various purposes served by the models? Explain.
 - (c) Write short notes on the following with suitable example and their significance to object oriented modeling:
 - (i) Link and Associations (i)
 - (ii) Abstract Classes
 - (iii) Meta Data
 - (iv) Inheritance.

2. Answer any two parts : $(10\times2=20)$

- (a) (i) What do you mean by scenario? Explain. Illustrate the scenario for phone call.
 - (ii) What do you mean by dynamic modeling? How it is different from static modeling?
- What are the problems with flat state diagrams? Also (b) discuss the nested state diagram with suitable example.
 - (ii) Discuss the concept of state generalization with suitable example.
- (c) Describe the following with an example using a diagram and their significance in modeling:
 - Aggregation Concurrency
 - Event Generalization. (ii)
- 3. Answer any two parts:

 $(10 \times 2 = 20)$

- There is a clear distinction between the definition and the implementation of a function. The definition describes the behavior of the function while the implementation actually computes the function. The definition of a function may be used to test the accuracy of the implementation. Prepare definition of each of the following functions using mathematics, diagrams, or pre-and post conditions:
 - (i) absolute value and throcase bus and I
 - trigonometric sine (ii)
 - (iii) natural logarithm, and
 - (iv) square root.

- (b) Processes in data flow diagrams must eventually be implemented as operations on objects. Each bottom-level, atomic process is an operation. Discuss the various ways for specifying the operations with the help of examples and suitable diagrams.
- (c) Write short notes on the following with suitable diagrams and some example:
 - (i) Data stores upol 100 horazoni 200 horazoni 200 horazonia.
 - (ii) Actors
 - (iii) Control Flows and
 - (iv) Constraints.

4. Answer any two parts:

 $(10 \times 2 = 20)$

- (a) (i) Write a short note on the principles of object oriented programming. Also give at least four examples of object oriented programming languages.
 - (ii) What do you mean by operator overloading? Discuss.

 Also explain various types of operators in C++.
- (b) (i) What do you mean by class templates and function templates? Describe their applications with suitable example in C++.
 - (ii) Write a short note on the utility of virtual functions and friend functions in C++ with suitable example.
- (c) Write a program in C++ using object oriented approach for multiplication and addition of two matrix of NXN where N is a positive integer and the matrix contains real numbers. Also give algorithm for the same.

- 5. Write short notes on any four with suitable example:
- man(02=4×2) inple meinted as operations on objects. Each bottom-level.
- atomic process is an opentate in methor process is a second of mays
- eslq(b) = Functions overloading in C++ od gair his one with the second
- (c) Exception handling in C++ managin additions that same (d) is File System in UNIX of anti-up cases stands about (a)
 - (e) Reusability and Extensibility of many orang bas it is suitable
 - (f) Jackson Structured Development (JSD). (i)
 - the notices kinen Actors for research of compact of the
 - (iii) Control Flore and quast sectors
 - (v) Crandins a gravitation of section (v)
 - ar . Professional Children in modeling .
- 4. Answer any two parts and nonnegonges (i) (10×2=20)
- (a) (i) Write a short note on the principles of object oriented programming. Also give at least four examples of
- object unionted programming languages.
- ode by the control of the street of the properties of the properties of the street of
 - Abo explain yamous types of operators in C++...
- · ylautos (b)is (i) m. What do you mear, by class templates and function of your materials with suitable
- med to test the second+3 fills for second section from the
- white a sect note on the utility of virtual functions

 . The most and friend functions in C towards suitable example.
- (c) Write a program in C++ using object oriented approach for multiplication and addition of two matrix of NXN where N is a positive integer and the matrix contains real numbers.
 - Also give algorithm for the sanically and