

(c) Explain the following for functional modelling :

- (i) Data store
- (ii) Context diagram.

6. Attempt any **two** parts :

- (a) What do you understand by inheritance ? Explain the different types of inheritance by taking a suitable example.
- (b) Write a program in C++ to differentiate between function overloading and function overriding.
- (c) Explain the following concepts in C++ by taking suitable example :
 - (i) String class
 - (ii) Arrays of Objects

7. Attempt any **two** parts :

- (a) How File handling is done in C++. Explain by taking a suitable example.
- (b) Write a program in C++ using class and objects. Take array of objects and explain how it can be used.
- (c) Write short notes on the following :
 - (i) C++ streams
 - (ii) Class Templates.

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 110403 Roll No.

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B.Tech.

(SEM. IV) THEORY EXAMINATION 2013-14

OBJECT ORIENTED PROGRAMMING WITH C++

Time : 3 Hours

Total Marks : 100

Note : Attempt questions from all Sections as per instructions.

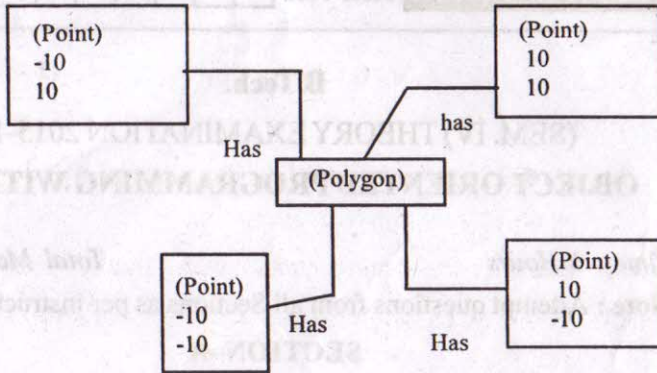
SECTION-A

1. Attempt **all** parts : **(10×2=20)**
- (a) How does a main () function in C++ differ from main() in C ?
 - (b) What is the use of scope resolution operator ?
 - (c) What is the purpose of using a derived class ?
 - (d) What is Polymorphism ?
 - (e) What do you understand by Data Abstraction ?
 - (f) Write the name of the function in C++ used for opening a file for input only.
 - (g) What is the use of friend function in C++ ?
 - (h) What is the purpose of constructors in C++ ?
 - (i) What do understand by dynamic modelling ?
 - (j) What is a Candidate Key ?

SECTION-B

2. Attempt any **three** parts : **(10×3=30)**
- (a) Explain different Object Modelling Technique (OMT)

models ? Prepare a class diagram from the instance diagram. Explain your multiplicity decision. Each point has a X-coordinate and Y-coordinate. What is the smallest number of points required to construct a polygon ?



- (b) Differentiate between Object Oriented Programming and Procedural Programming ? Write a program in C++ by creating a class of integers and write a function that prints all the Prime numbers from the class.
- (c) What is the purpose of levels in DFD ? Explain by drawing a DFD for the automation of Library in your college. Draw upto 3 levels of DFD.
- (d) Write a program in C++ to add, multiply, divide and subtract two complex numbers using the concept of operator overloading.
- (e) A File contains a list of telephone numbers in the following form :

Name	Phone
Amit	9213654291
Laptop	9659213008
.....
.....

The name contains only one word and the names and telephone numbers are separated by white spaces. Write a program in C++ to read the file and output the list in two columns as shown above.

SECTION-C

Attempt all questions. (5×10=50)

3. Attempt any two parts :
 - (a) What is the difference between link and association ? Draw an object diagram to explain.
 - (b) Explain pattern and metadata with suitable example ?
 - (c) Define the term multiplicity and quantification with suitable examples.
4. Attempt any two parts :
 - (a) Differentiate between the following :
 - (i) Aggregation and Association
 - (ii) Generalization and Specialization.
 - (b) What are Nested State diagrams ? Why are they useful ? Explain with suitable examples.
 - (c) Describe events and states. How is a state diagram prepared ? Explain by suitable examples.
5. Attempt any two parts :
 - (a) Define UML. Draw a UML diagram for the automation of training and placement office of any college. Make suitable assumptions if required and explain them clearly.
 - (b) What is Exceptions. Explain with suitable examples.