4. What are the differences between a friend function for a class and a member function of a class? Explain with the help of example.

5. Write Short notes of the following:

    i. Dynamic Models.

    ii. Jackson Structures Development (JSD)

    iii. File System in Linux.

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

Paper ID : 2295040 Roll No.

B. TECH.

Regular Theory Examination (Odd Sem-VII), 2016-17

OBJECT ORIENTED SYSTEM AND C++

Time : 3 Hours *Max. Marks : 100*

Section - A

1. **Attempt all parts. All parts carry equal marks.**

    (10×2=20)

    a) What is object oriented methodology?

    b) Explain links and association with suitable example

    c) Prepare a portion of an object diagram for a library book checkout system that show the data a book in due and the late charges for an overdue book as derived objects.

    d) Prepare a class diagram from the instance diagram in following?

(Country)	(Country)	(Country)
Spain	France	Belgium

Fig. 1

e) What are the relationship in object - oriented language?

f) Define Metaclass?

g) Explain Use case diagram?

h) Name the building blocks of UML?

i) What is polymorphism?

j) Explain the function templates?

Section - B

Attempt any 5 questions All questions carry equal marks. **(5×10=50)**

2. a) Prepare an instance diagram for an imaginary round trip you took last weekend to London include at least one instance each object class. Fortunately, direct flights on a hypersonic plane were available. A friend of yours went with you but decided to stay a while and is still there. Caption Johnson was your pilot on both frights. You had a different seat each way, but you noticed it was on the same plane because of a distinctive dent in the tail section.

b) Define Rules for operator overloading. Write a program to overload the subscript operator '[ ]'

c) What does inheritance means in C++? What are different forms of inheritance ? Give an example of each.

d) Explain with example how can a class template be created.

e) Explain what is meant by multiple inheritance. How does constructor get executed in such a case? Explian with example.

f) Write a function that dynamically allocation an array of integers. The function should accept an integer argument indicating the number of elements to allocate. The function should return a pointer to the arry.

g) What do you mena by class templates and function templates? Describe their applications with suitable example in C++

h) Write short notes on the following with suitable diagrams and some example.
   i. Data stores
   ii. Actors
   iii. Control Flows
   iv. Constraints.

Section - C

Attempt any 2 parts from the following. (2×15=30)

3. What is concept of file in UNIX operating system? How the ordinary files can be handled? Also Discuses concept of process in UNIX.