```
int x,y;
{
1.      while (x!=y){
2.          if (x>y) then
3.              x = x – y;
4.          else y = y –x;
5.      }
6.      return x;
}
```

10. (a) Define Work Breakdown Structure and Activity Networks 2+3

(b) Find the Critical Path for the following Table. 10

Notation	Activity	Effort in person month
T_1	Requirement Specification	1
T_2	Design Database	2
T_3	Coding Database	2
T_4	Code User Interface	5
T_5	Code Control Processing Part	3
T_6	Design GUI Part	1
T_7	Integration and Testing	6
T_8	Write User Manual	3

The precedence relation $T_i \leq \{T_j, T_k\}$ implies that T_i must complete before either task T_j and T_j can start. The following precedence relation is known to hold among different tasks : $T_1 \leq T_2 \leq \{T_3, T_4, T_5, T_6\} \leq T_7$.

11. Write short notes on any three of the following : 3x5=15

a. Class Diagram

b. White Box Testing

c. Spiral Model

d. Data Dictionary

e. COCOMO – 2

x-x-x

2014

Software Engineering

Time Allotted : 3 Hours *Full Marks : 70*

The figure in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A

1. Choose the correct alternatives of the following: 10x1=10

A. i. An important advantage of polymorphism is facilitation of reuse.

ii. Class diagram developed using UML can serve as the functional specification of a system.

(a) Both i and ii are true (b) Both i and ii are false

(c) Only i is true (d) None of these

B. Testing performed by the development team is the :

(a) Alpha Testing (b) Beta Testing

(c) Acceptance Testing (d) Glass Box Testing

C. Meta Model is another name of :

(a) Waterfall Model (b) Iterative Model

(c) Prototype Model (d) Spiral Model

D. COCOMO stands for :

(a) Constructive Cost Model

(b) Constructive Estimation Model

(c) Constructive Cost Estimation Model

(d) Cost Estimation Model

E. COCOMO belongs to :

(a) Empirical Estimation technique

(b) Heuristic Estimation Technique

(c) Analytical Technique

(d) None of these

F. The potential risks are best detected by :

(a) Waterfall Model (b) RAD Model

(c) Prototype Model (d) Spiral Model

G. Which is not a part of feasibility analysis?

(a) Legal Feasibility (b) Political Feasibility

(c) Technical Feasibility (d) Economic Feasibility

H. Which are included in the software requirement specification?

(a) Error Handling (b) Data Description

(c) Functional description (d) Performance Description

I. Barry Boehm has proposed :

(a) Waterfall Model (b) RAD Model

(c) Prototype Model (d) Spiral Model

J. Aggregation relationship between classes is Anti – Symmetric.

(a) True (b) False

Group-B

Attempt any *Three* of the following 3X5=15

2. What is data dictionary? Explain it with an example. Why is it used?
2+2+1

3. What are the basic steps and main assumptions or COCOMO? 5

4. Distinguish between physical DFD and logical DFD with an example. 5

5. What are the different stages of waterfall model? 5

6. Which life cycle do you follow for developing software for each of the following applications? Justify your selection of model with the help of an appropriate reason.

(a) A Game (b) A compiler for a new language. 5

Group – C

Attempt any *Three* of the following
3X15=45

7. (a) Why is intermediate COCOMO expected to give more accurate estimates than the basic COCOMO? 3

(b) Assume that size of software product has been estimated to be 50,000 lines of source code. Estimate the effort required to develop the product and nominal development time for organic, semi – detached and embedded systems respectively.
8

(c) Explain Delphi Cost estimation Technique. 4

8. (a) Distinguish between Data Flow Diagram and Flow Chart.
5

(b) Draw Level – O and Level – 1 data Flow Diagram for Library System management software.
10

9. (a) Explain the testing process with diagram 7

(b) Determine the Cyclomatic Complexity for the following snippet. 8

```
int computeGCD(x,y)
```