CS/B.Tech/EE/Even/Sem-6th/EE-604A/2015

WEST BENGAL UNIVERSITY OF TECHNOLOGY

EE-604A

SOFTWARE ENGINEERING

Time Allotted: 3 Hours   Full Marks: 70

The questions are of equal value.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as
practicable. All symbols are of usual significance.

GROUP A
(Multiple Choice Type Questions)

1. Answer *all* questions.   10 × 1 = 10

(i) One way to improve readability in coding is to

(A) avoid goto statements

(B) name variables and functions according to their use

(C) modularize the program

(D) none of these

(ii) Big-bang integration testing is useful for projects with

(A) small number of modules

(B) large number of modules

(C) average number of modules

(D) none of these

(iii) Critical path method is a task of

(A) project planning

(B) project scheduling

(C) risk management

(D) configuration management

(iv) The most important feature of spiral model is

(A) requirement analysis

(B) quality management

(C) risk management

(D) configuration management

(v) In COCOMO model, if project size is 2-50 KLOC, then which mode is to be selected?

(A) Organic   (B) Semi-detached

(C) Embedded   (D) None of these

(vi) Which form of software development model is most suited to a system where all the requirements are known at the start of a project and remain stable throughout the project?

(A) Waterfall model   (B) Incremental model

(C) Evolutionary model   (D) Spiral model

(vii) Beta testing is performed by

(A) the developers

(B) the test team

(C) the analyst

(D) select group of friendly customer

(viii) What is 10 KLOC?

(A) 10 kilo lines of source code

(B) 10 kilo lines of static code

(C) 10 line of code

(D) None of these

(ix) In which type of testing procedure is a single module tested?

(A) integration testing   (B) unit testing

(C) alpha testing   (D) none of these

(x) Developing a new operating system is a / an

(A) organic type of software project

(B) semidetached type of software project

(C) embedded type of software project

(D) none of these

GROUP B
(Short Answer Type Questions)

Answer any *three* questions. $3 \times 5 = 15$

2. What is UML? Enumerate different diagrams of UML. 2+3

3. Draw a data flow diagram for the Simple Library Management System. 5

4. Explain the phases of Spiral Model with advantages and disadvantages. 3+1+1

5. What is feasibility study? Explain different types of feasibility studies. 5

6. (a) "Loosely coupled and strongly cohesive system is our target" – explain. 2+3
   (b) Explain the importance of Data Dictionary.

GROUP C
(Long Answer Type Questions)

Answer any *three* questions. $3 \times 15 = 45$

7. (a) What is estimation? Explain its role in S/W planning. Explain any one cost estimation model with its merits and demerits. 8
   (b) Explain the purpose of Data Flow Diagram in S/W development process. 3
   (c) Explain the role of System Analyst. 4

8. (a) Draw the control flow graph for the following program. Also calculate the cyclomatic complexity. 5

```
int gcd (int x, int y)
{
    while(x!=y)
    {
        if(x>y)
            x=x-y;
        else
            y=y-x;
    }
    return x;
}
```

   (b) What do you mean by Software Quality? What are SQA activities? 6

   (c) Differentiate between logical DFD and physical DFD. 4

9. (a) Draw the E-R diagram of Hospital management system. 5
   (b) Define Unit testing, Integration testing and System testing. 2+2+2
   (c) Draw the Use-Case diagram for Library Management System. 4

10. (a) Compare top-down design and bottom-up design of a system. 6
    (b) Define quality assurance and quality control. 5
    (c) What do you mean by 'Staffing' in software engineering? 4

11. Write short notes on any *three* of the following: 3×5
    (a) Prototyping Model
    (b) Stubs and Drivers in Integration Testing
    (c) Software Maintenance
    (d) Decision tree
    (e) McCall's quality triangle.