2022

COMPUTER SCIENCE — HONOURS

Paper : CC-13

(Software Engineering)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***question no.* 1** and ***any four*** questions from the rest.

1. Answer ***any five*** questions : 2×5

(a) Why is modular designing preferred in software design?

(b) Name any four SQA activities.

(c) Why is risk analysis important?

(d) Differentiate between the 'completeness' and 'correctness' property of an SRS.

(e) Why do we need a stub module?

(f) What is done during the 'feasibility study' of a software?

(g) What makes a 'portable' software good?

(h) Why is the Spiral Model known as the Meta Model?

2. (a) What are the advantages of the Prototype Model over Waterfall Model?

(b) Differentiate between Throwaway Prototype and Evolutionary Prototype.

(c) Why is Spiral Model difficult to use in real life projects?

(d) Why is Iterative Waterfall Model better than Classical Waterfall Model? 3+3+2+2

3. (a) A software project of type embedded comprises of 4280 KLOC. Compute the estimated development time and the effort needed.

(b) Describe any two types of maintenance needed in software with suitable example. 4+6

4. (a) What is the importance of regression testing?

(b) Why is low coupling and high cohesion desirable?

(c) What steps are performed in Alpha-testing? Why is Beta-testing needed after performing Alpha-testing? 3+3+(2+2)

5. (a) Draw a structure chart for a sorting program.

(b) What is 'V and V approach' in software quality?

(c) What are the different types of unit testing? 5+3+2

6. (a) What are the different ways to compute cyclomatic complexity?

(b) Compute the cyclomatic complexity of the following problem :

```
Read A
I = 1
While (I < = A)
    Print I
    I = I + 1
End While
```

4+6

7. (a) Differentiate between Logical DFD and Physical DFD.

(b) Draw Level-O DFD and Level-1 DFD of College Admission system. 3+7

8. (a) Explain the characteristics of good SRS.

(b) Why is decision table used?

(c) What are the different types of system testing? 5+3+2
