

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)

Please Turn Over

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-0 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
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