May 2024

B.Tech. (ENC/CSE(AIML)) (Sixth Semester)

Software Engineering (PEC-CS-S-601)

Time : 3 Hours]   [*Maximum Marks* : 75

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) What was the significance of software crisis ?

    1.5

    (b) What is a prototype model ?   1.5

    (c) What is a function point ?   1.5

    (d) Differentiate between coupling and cohesion.

    1.5

    (e) What is a data dictionary ?   1.5

    (f) What is the difference between static and dynamic testing ?   1.5

(g) What is CMM ? 1.5

(h) What is COCOMO ? 1.5

(i) What is abstraction in software design ? 1.5

(i) What is the difference between error, bug and failure ? 1.5

Part B

2. (a) Explain the Spiral process model in detail. 10

(b) What is the difference between process, project and product ? 5

3. (a) What is use case based estimation ? 5

(b) Compute the function point value for a project with the following information domain characteristics :

No. of User inputs = 30

No. of User outputs = 42

No. of User enquiries = 08

No. of User files = 07

No. of external interfaces = 06

Assume all adjustment values are moderate. 10

4. Explain all types of coupling and cohesion with example of each. 15

5. (a) Explain any *three* software design principles. 5

(b) Draw the DFD for Result preparation automation system for University. Clearly describe the working of the system. Also mention all assumptions made by you. 10

6. (a) A program has been designed to determine the greatest number. It takes three input values from the range [1,100].

Design all test cases for this program using BVC, Robust testing and worst-case testing methods. 10

(b) What is the difference between integration and system testing ? 5

7. (a) Explain various SQA activities. 5

(b) Explain all the CMM levels. Also discuss about ISO 9126. 10