

NCIT

Level: Bachelor (SE)

Year : 2018

Programme: BE

Full Marks : 100

Pass Mark : 45

Course: Software Engineering Fundamentals

Time : 3 hrs

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

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What is a software engineering paradigm? Discuss the Spiral process model, stating its advantages and disadvantages. 7
8
b) You are required to develop a Hotel Management System in which the estimated lines of codes (LOC) is calculated to be 76,000 and a review of the historical data reveals that the average productivity for this type of system is 250 LOC/pm and the labor rate is Rs. 6,200 per month. What would be the estimated project cost and the estimated effort for this software package?
OR
Given the data below, compute the function point value for a project with the following information domain characteristics.
Number of user inputs: 56
Number of user outputs: 58
Number of user inquiries: 35
Number of files: 15
Number of external interfaces: 8
Assume that all complexity adjustment values are average.
2. a. Why is SQA needed? Discuss how SQA activities are carried out. 8
b. What is SCM? Explain SCM processes briefly. 7
3. a. What do you understand by OOA and OOD? Define Inheritance, encapsulation and polymorphism with relevant examples. 5
b. What is Change control and Version control explain in detail. 10
4. a. What is software architecture? Explain “call and return” 7

- software architecture.
- b. What is analysis modelling? How can requirement specification be helpful in software development process? Differentiate between data and functional modelling. 8
5. a. What is cyclomatic complexity? Find the cyclomatic complexity of following source code with the help of Flow diagram. 8
- ```

If A=10 Then
If B>C Then
A=B
Else
A=C
END IF
END IF
Print A
Print B
Print C.
.

```
- b. “Spiral Model supports the basic OO concepts.” Justify this statement. Support your answer with illustrations. 7
6. a. What is formal Technical Review? Explain how FTR aids in improving software quality. 7
- b. Discuss in detail the use of data dictionary with a brief example. 8
7. Write short notes on **(Any Two)**: 2×5
- a. ISO 9000 Quality Standards
  - b. Evolutionary Model
  - c. Black Box Testing.