

Code No: 115EM

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, November - 2015

SOFTWARE ENGINEERING

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) What is an agile process? Explain. [2]
- b) What is the difference between a UP Phase and a UP Workflow? [3]
- c) What is the intent of requirements validation? [2]
- d) What are the characteristics of good SRS document? [3]
- e) Differentiate between coupling and cohesion. [2]
- f) How do we assess the quality of software design? [3]
- g) What is Cyclomatic complexity? What is its purpose? [2]
- h) What are the metrics used for software maintenance? [3]
- i) What is software reliability? Define. [2]
- j) Can a program be correct and still not exhibit good quality? Explain. [3]

PART - B

(50 Marks)

- 2.a) What is the purpose of process assessment? Why has SPICE been developed as a standard process assessment? [5+5]
- b) Explain Spiral model with a neat sketch. What can you say about the software that is being developed or maintained as you move outward along the spiral process flow? [5+5]

OR

- 3.a) What are the five generic process framework activities? Explain. [5+5]
- b) Explain different levels of Capability Maturity model and list the KPA's of each level. [5+5]

- 4.a) What is the goal of requirements analysis phase? Give reasons why the requirements analysis phase is a difficult one. [5+5]
- b) Briefly explain the models used for structured analysis. [5+5]

OR

- 5.a) Differentiate between functional and non-functional requirements with suitable examples. [5+5]
- b) "Data Modeling can be viewed as a subset of OOA." Comment on this statement and justify your comments. [5+5]

6.a) How are the concepts coupling and software portability are related? Provide examples to support your discussion.

b) Explain the process of mapping data flow into software architecture. [5+5]

OR

7.a) Write the taxonomy of architectural styles and give a brief description of each style.

b) State and explain the generic tasks that are always performed in user interface design. [5+5]

8.a) What is the need of software testing? What are its main objectives and principles?

b) Describe Boundary Value Analysis (BVA) testing for software. [5+5]

OR

9.a) What are the main objectives of Software verification and validation?

b) Briefly explain different V and V techniques. Discuss the software metrics that can be applied to the qualitative assessment of software quality and the side effects that occur during maintenance phase. [5+5]

10.a) Explain ISO 9126 quality model with a neat sketch.

b) Explain various software quality standards and discuss how to assure them. [5+5]

OR

11.a) Explain the factors that affect software quality.

b) List the major risks in a software project. What are the major ways to abate the risk of cost and schedule overruns? [5+5]

