

R18

Code No: 154CM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year II Semester Examinations, April/May - 2023

PRINCIPLES OF SOFTWARE ENGINEERING

(Computer Engineering – Software Engineering)

Time: 3 Hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) What are the disadvantages of Waterfall model? [2]
- b) Differentiate between a UP Phase and a UP Workflow. [3]
- c) What is meant by system requirements? [2]
- d) Explain about structured methods. [3]
- e) What are the principles of software design? [2]
- f) What do you mean by software design quality? Explain. [3]
- g) What is debugging? Explain. [2]
- h) What is system testing? Explain. [3]
- i) What is software reliability? Explain. [2]
- j) What is the significance of formal technical reviews? 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? Explain.
- b) Explain different levels of Capability Maturity model and list the key process areas of each level. [5+5]

OR

- 3.a) What are the five generic process framework activities? Explain.
- 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]

- 4.a) What are functional and non-functional requirements? Explain with suitable examples.
- b) Explain the goals of requirements analysis phase. Why the requirements analysis phase is a difficult one? Give the reasons. [5+5]

OR

- 5.a) Discuss about different behavioral models used in software development.
- b) How a software requirements document is structured? Explain. [5+5]

- 6.a) Describe the conceptual model of Unified Modeling Language.
b) Briefly discuss about various design concepts of software development. [5+5]

OR

- 7.a) What is the purpose of use case diagrams? Illustrate the same with an example.
b) What is the intent of Component diagram? Explain the component diagram with a neat sketch. [5+5]

- 8.a) What is validation testing? What is its significance?
b) Discuss the approaches used for testing conventional software. [5+5]

OR

- 9.a) What is structural testing? Explain any one structural testing technique with example.
b) What are the metrics used for software maintenance? Explain. [5+5]

- 10.a) What types of risks occur during software development? List the major risks in a software project. What are the major ways to abate the risk of cost and schedule overruns?

- b) With a neat sketch, explain ISO 9126 quality model and elaborate its quality factors. [5+5]

OR

11. What is RMMM? Explain in detail about RMMM Plan. [10]

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