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15CS42

Fourth Semester B.E. Degree Examination, June/July 2018

Software Engineering

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. What are the essential attributes of good software? Explain the key challenges facing in software engineering. (08 Marks)
- b. Explain four steps in spiral model of requirements elicitation and analysis process. And why the understanding of requirements from stakeholders is a difficult task? Explain. (08 Marks)

OR

- 2 a. What is a software process model? Explain the types of software process models. (05 Marks)
- b. What is requirement specification? Explain various ways of writing system requirements. (06 Marks)
- c. Explain the different checks to be carried during requirement validation process. (05 Marks)

Module-2

- 3 a. Draw and explain use case modeling and sequence diagram for patient information system. (10 Marks)
- b. With a diagram, explain the phases in the Rational Unified Process (RUP). (06 Marks)

OR

- 4 a. Draw and explain state diagram of a microwave oven. (07 Marks)
- b. What is design pattern? Explain four essential elements of design pattern. (05 Marks)
- c. Explain the general models of open source licenses. (04 Marks)

Module-3

- 5 a. What is test driven development? With neat diagram, explain test driven development process. (08 Marks)
- b. With neat diagram, explain six stages of acceptance testing process. (08 Marks)

OR

- 6 a. With neat diagram, explain the software evolution process. (05 Marks)
- b. Explain three different types of software maintenance. (03 Marks)
- c. Draw a chart showing relative business value and system quality of legacy system management and explain four clusters of systems. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.

Module-4

- 7 a. For the set of tasks shown below draw the project scheduling using,
 i) Activity bar chart
 ii) Staff allocation chart

(10 Marks)

Task	Duration (Days)	Dependencies
T ₁	10	-
T ₂	15	-
T ₃	15	T ₁ (M1)
T ₄	10	-
T ₅	10	T ₂ , T ₄ (M3)
T ₆	5	T ₁ , T ₂ (M4)
T ₇	20	T ₁ (M1)
T ₈	25	T ₄ (M2)
T ₉	15	T ₃ , T ₆ (M5)
T ₁₀	15	T ₇ , T ₈ (M6)
T ₁₁	10	T ₉ (M7)
T ₁₂	10	T ₁₀ , T ₁₁ (M8)

- b. Explain briefly the algorithmic cost modeling and write the difficulties.

(06 Marks)

OR

- 8 a. Write any four product and process standards.
 b. Explain briefly the software review process.
 c. Explain briefly the process of product measurement.

(04 Marks)

(06 Marks)

(06 Marks)

Module-5

- 9 a. State and explain the principles of agile methods.
 b. Write a note on pair programming.
 c. List the advantages of SCRUM used in a telecommunication software development environment.

(05 Marks)

(06 Marks)

(05 Marks)

OR

- 10 a. Explain the practices involved in the extreme programming.
 b. How the agile methods are scaled? State the coping of agile methods for large system engineering.

(10 Marks)

(06 Marks)

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