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Fourth Semester B.E. Degree Examination, Dec.2017/Jan.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 is software? List the fundamental software engineering activities. Mention and explain the key challenges or the general issues facing software engineering.   **(05 Marks)**
    b.   List and explain any five software engineering code of ethics.   **(05 Marks)**
    c.   Write block diagram for illustrating incremental development model. State at least two benefits and the problems in incremental development.   **(06 Marks)**

OR

2   a.   Explain functional, non-functional and domain requirements with at least one example for each.   **(03 Marks)**
    b.   Write the structure of the requirement document as suggested by IEEE standards.   **(10 Marks)**
    c.   List out all the stake-holders in Mental Health Cone Patient Management System (MHC-PMS). Write a note on interviewing stake-holders for requirements discovery.   **(03 Marks)**

Module-2

3   Write short notes on:
    a.   Context models with context diagram for MHC-PMS.   **(06 Marks)**
    b.   Interaction models   **(05 Marks)**
    c.   Behavioral models   **(05 Marks)**

OR

4   a.   Write a neat block diagram and explain the phases of Rational Unified Process (RUP).   **(06 Marks)**
    b.   List out all the activities in an object oriented design process.   **(02 Marks)**
    c.   What is a sequence model? Write the diagram for sequence model of operations in collecting data from a weather station and explain.   **(08 Marks)**

Module-3

5   a.   State and explain development testing and its three levels - unit testing, component testing and system testing.   **(04 Marks)**
    b.   List out all the guidelines for testing.   **(04 Marks)**
    c.   Explain test-driven development (TDD), with a block diagram. Explain TDD activities and benefits of TDD.   **(08 Marks)**

OR

6   a.   With appropriate block diagram, explain the software evolution process.   **(06 Marks)**
    b.   Define "program evolution dynamics". Discuss Lehman laws for program evolution dynamics.   **(10 Marks)**

Module-4

7   a.   Explain software pricing. List and briefly explain the factors affecting software pricing.
                                                                                    (06 Marks)
    b.   List and explain various COCOMO cost estimation models.   (10 Marks)

OR

8   a.   List out the questions to be answered by the quality management team to divide whether or not the software is fit for its intended purpose.   (06 Marks)
    b.   Explain the various inspection checklists for software inspection process. (06 Marks)
    c.   What are product metrics? Explain its two classes of metrics.   (04 Marks)

Module-5

9   a.   Draw the block diagram and explain the process of prototype development. What are the benefits of a prototype? Write briefly about throw away prototypes.   (10 Marks)
    b.   List and explain any six extreme programming practices.   (06 Marks)

OR

10 a.   List all the four key features of testing in XP.   (02 Marks)
    b.   What is pair programming? List the advantages of pair programming.   (04 Marks)
    c.   Explain SCRUM. Draw and explain block diagram for the SCRUM process. List all the key characteristics of this process. Mention the advantages of SCRUM.   (10 Marks)

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