Reg. No. : | | | | | | | | | | |

Question Paper Code: 54084

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fourth Semester

Information Technology

15UIT404 - SOFTWARE ENGINEERING METHODOLOGIES

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Which of these are the five generic software engineering framework activities?

   (a) Analysis, designing, programming, debugging, maintenance
   (b) Communication, risk management, measurement, production, reviewing
   (c) Communication, planning, modeling, construction, deployment
   (d) Analysis, planning, designing, programming, testing

2. The data dictionary contains descriptions of each software

   (a) control item (b) data object
   (c) diagram (d) notation

3. The importance of software design can be summarized in a single word

   (a) accuracy (b) complexity
   (c) efficiency (d) quality

4. Boundary value testing

   (a) is the same as equivalence partition testing
   (b) tests values at the smallest incremental distance on either side of an equivalence partition boundary
   (c) tests combinations of input circumstances
   (d) is used in white box testing strategies

5. Which of following are advantages of using LOC (lines of code) as a size-oriented metric

(a) LOC is a language independent measure
(b) LOC is a language dependent measure
(c) LOC is easily computed
(d) LOC can be computed before a design is completed

PART - B (5 x 3 = 15 Marks)

6. List the characteristics of software process.

7. State the three different types of non-functional requirements placed on a system.

8. Draw the diagram that depicts the relationship between analysis model and design model.

9. Define black box and white box testing.

10. How are LOC and FP used during software project estimation?

PART - C (5 x 16 = 80 Marks)

11. (a) Explain iterative waterfall and spiral model for software life cycle and discuss various activities in each phase. (16)

Or

(b) Briefly explain about the Scrum and Extreme Programming approach. (16)

12. (a) Explain the ways and means for collecting the software requirements and how are they organized and represented. (16)

Or

(b) A car manufacturer wishes to save weight and improve reliability by replacing most of the vehicle's wiring harness with a local area network. Systems such as engine management, anti-lock braking, traction control and stability control will thus share common platform components. Your task is to ensure that the safety of these systems, and of the vehicle electronics overall, is not impaired by this upgrade. Design the complete requirement phase engineering for the above project in detail. (16)

13. (a) Draw the architecture design (transaction mapping) for a computer controlled video conference system which allows video, audio and computer data to be visible to

several participants at the same time. Explain the steps involved in detail and make reasonable assumptions about the system requirements (16)

Or

(b) Explain data architectural and procedural design for a software. (16)

14. (a) List and explain different types of testing done during the testing phase. (16)

Or

(b) Explain software implementation techniques What is the percentage in total cost of the project? How do you expedite the implementation stage? (16)

15. (a) Explain various cost estimation models and compare. (16)

Or

(b) Explain the top ten risk item and techniques for managing them in detail. (16)

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