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Question Paper Code : 57250

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B.E/B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fourth Semester

Computer Science and Engineering

CS 6403 – SOFTWARE ENGINEERING

(Common to Information Technologies)

(Regulations 2013)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What led to the transition from product oriented development to process oriented development ?
2. Mention the characteristics of software contrasting it with characteristics of hardware.
3. List the characteristics of a good SRS.
4. What are the linkages between data flow and E-R Diagram ?
5. If a module has logical cohesion, what kind of coupling is this module likely to have ?
6. What is the need for architectural mapping using data flow ?
7. How can refactoring be made more effective ?
8. Why does software fail after it has passed from acceptance testing ?
9. List a few process and project metrics.
10. Will exhaustive testing guarantee that the program is 100% correct ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Discuss the prototyping model. What is the effect of designing a prototype on the overall cost of the software project ? **(8)**

(ii) Describe the type of situations where iterative enhancement model might lead to difficulties. **(8)**

OR

(b) (i) Elucidate the key features of the software process models with suitable examples. **(8)**

(ii) What is the role of user participation in the selection of a life cycle model ? **(8)**

12. (a) (i) Explain the organization of SRS and highlight the importance of each subsection. **(8)**

(ii) Requirements analysis is unquestionably the most communication intensive step in the software engineering process. Why does the communication path frequently breaks down ? **(8)**

OR

(b) (i) Differentiate between user and system requirements. **(4)**

(ii) Describe the requirements change management process in detail. **(12)**

13. (a) Write short notes on the following. **(4 × 4 = 16)**

(i) Design heuristics

(ii) User-interface design

(iii) Component level design

(iv) Data/Class design

OR

(b) (i) What is modularity ? State its importance and explain coupling and cohesion. **(8)**

(ii) Discuss the differences between Object Oriented and Function Oriented Design. **(8)**

14. (a) (i) State the need for refactoring. How can a development model benefit by the use of refactoring ? **(8)**

(ii) Why does software testing need extensive planning ? Explain. **(8)**

OR

(b) (i) Compare and contrast alpha and beta testing. **(8)**

(ii) Consider a program for determining the previous date. Its input is a triple of day, month and year with the values in the range $1 \leq$ month ≤ 12, $1 \leq$ day ≤ 31, $1990 \leq$ year ≤ 2014. The possible outputs would be previous date or invalid input date. Design the boundary value test cases. **(8)**

15. (a) Write short notes on the following : **(2 × 8 = 16)**

(i) Make/Buy decision

(ii) COCOMO II

OR

(b) (i) An application has the following: 10 low external inputs, 8 high external outputs, 13 low internal logical files, 17 high external interface files, 11 average external inquires and complexity adjustment factor of 1.10. What are the unadjusted and adjusted function point counts ? **(4)**

(ii) Discuss Putnam resources allocation model. Derive the time and effort equations. **(12)**