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Question Paper Code : 91399

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Fourth Semester

Computer Science and Engineering

CS 6403 – SOFTWARE ENGINEERING

(Common to Information Technology)

(Regulations 2013)

(Also common to PTCS 6403 – Software Engineering for B.E. (Part-Time) –
Fourth Semester – Computer Science and Engineering – Regulations 2014)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Suggest a model to be used when enough staffing is unavailable and why.
2. State the pros and cons of COCOMO model.
3. Identify the notations for requirements specification.
4. State the applications of petri nets.
5. What is the use of fan in and fan out ?
6. Distinguish between class based components and traditional components.
7. How to calculate the reliability of the module ?
8. "Integration testing is harder than unit testing". Justify.



9. Estimate the function point for the below system.

Using the following table for function point weightings :

Factors	Weights		
	Simple	Average	Complex
Number of user inputs	3	4	6
Number of user outputs	4	5	7
Number of user inquiries	3	4	6
Numer of files	7	10	15
Number of external interfaces	5	7	10

A system being developed has the following characteristics :

Number of user inputs 10 (simple)

Number of user outputs 7 (simple)

Number of user inquiries 3 (average)

Number of files 6 (average)

Number of external interfaces 1 (complex)

10. Predict the expected cost for any branch of the decision tree in Make / Buy decision scenario.

PART – B

(5×13=65 Marks)

11. a) i) Explain the term "Engineering" in Software Engineering. (3)
 ii) Describe at least one scenario where 'RAD model would be applicable than not the waterfall model'. (10)

(OR)

- b) i) Summarize in detail about risk management. (5)
 ii) Elaborate on how LOC and FP can be used in project estimation. (8)

12. a) A software system is to be developed to automate a library catalogue. This system will contain information about all the books in a library and will be usable by library staff and by book borrowers and readers. The system should support catalogue browsing, querying, and should provide facilities allowing users to send messages to library staff reserving a book which is on loan.

For the above specification mention sketch the outline of requirements document as per the IEEE standard format.

(OR)

- b) Illustrate in detail about
 i) Petri nets (6)
 ii) Data Dictionary. (7)



13. a) Outline clearly the concepts and types of coupling and cohesion with examples of each.

(OR)

- b) Design and illustrate the user interface design for an webpage advertising underwater submarine.

14. a) Demonstrate the differences between black-box and structural testing and suggest how they can be used together in the defect testing process.

(OR)

- b) i) Identify the purpose of regression testing. What are the two main activities of regression testing? (9)

- ii) Why do we need validation testing? Explain. (4)

15. a) Explain in detail about the various phases, steps and activities that are needed for planning and managing a project with an illustration.

(OR)

- b) Describe in detail about :

- i) Risk Mitigation, Monitoring and Management Plan (RMMM) (8)

- ii) Earned Value Analysis (EVA). (5)

PART - C

(1×15=15 Marks)

16. a) Given,

Number of user inputs = 15

Number of user outputs = 13

Number of external interfaces = 11

1 function point = 20 LOC (as fourth generation language is used).

Values of constant used in basic COCOMO model, $a = 2.4$, $b = 1.05$, $c = 2.5$, $d = 0.38$.

Calculate and evaluate the effort and duration using the above details for basic COCOMO model.

(OR)

- b) For each of the following types of projects, choose the most appropriate life cycle model and justify your choice by a couple of lines of explanation

- i) You are migrating a legacy application in mainframes to Oracle. The project goes through well-defined phases of contract signing, taking each program of the current system with a well-defined acceptance test data, converting it to Oracle and proving that the output matches the expected output. It is not possible to seek intermediate feedback. (8)

- ii) You are developing a proof-of-concept to show your prospect on how your product is suited for developing wireless applications. You do not have access to expensive CASE tools. (7)