A 1157

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Sixth Semester

Computer Science and Engineering

CS 338 — SOFTWARE ENGINEERING

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is COCOMO model of estimation?

2. How do you schedule a project?

3. What are the steps involved in Design stage of a software?

4. What are the various supporting documents prepared for software ? Explain.

5. What is the relationship between reliability and quality attributes of a s/w?

6. What is SEI-CMM?

7. Distinguish between Black and White Box testing.

8. What are the various issues in Maintenance of the software?

9. What do you mean by version control?

10. How CASE will assist software development?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Using COCOMO, estimate time required for the following:

(1) A semi-detached model of software project of 2000 lines

(2) An embedded model of s/w of 30,000 lines

(3) An organic model of s/w of one lakh lines

(4) An organic model of s/w of 10 lakh lines. (8)

(ii) How do you analyze risk? Give two examples and explain. (8)

Or

(b) (i) What are the steps in writing Requirements specification for s/w? Explain each step. (8)

(ii) What is spiral model ? How much it is useful for the industry? Explain with an example. (8)

12. (a) (i) Distinguish Cohesion and Coupling. How these concepts affect Software Development? Describe with help of an example. (8)

(ii) How do you characterize Reusability of s/w? What is the present status of reusability of s/w in industry? Give one example reusable s/w code and explain. (8)

Or

(b) (i) What do you mean by Real Time Design? Discuss the real time design issues for Banking ATM software development. (8)

(ii) What is distributed system design? Give distributed system design for Passenger Bus reservation s/w, considering the critical issues. (8)

13. (a) (i) Distinguish Process and Product metrics. Quote four metrics of each type and explain. (8)

(ii) How far ISO 9000 standard is applicable for s/w development? Justify your statement with one case study. (8)

Or

(b) (i) Distinguish Direct and Indirect measures of metrics. Give two cases to support your statement. (8)

(ii) Six Sigma is often considered a standard of quality for s/w! Do you agree? Justify your statement with two examples. (8)

14. (a) (i) What do you mean by Boundary Value analysis and testing? Why it is needed ? How it is carried out? (8)

(ii) Find the boundary value test cases for the following:

If x is less than level 1 go to 100 else 200

If y is greater than level 2 go to 300 else 400. (8)

Or

(b) (i) When do you stop testing ? Justify your answer with two illustrations. (8)

(ii) Design a test case for the following program:

GCD (X, Y); if X=Y, then X

else if X > Y, then GCD(X-Y, Y)

else GCD (X,Y-X).

end if

end if. (8)

specification for s/w? (8)

ful for the industry? (8)

ese concepts affect example. (8)

What is the present e example reusable (8)

uss the real time ment. (8)

ted system design critical issues. (8)

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Give two cases (8)

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(8)

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5. (a) (i) The present version of a s/w is XYZ 12.8.4.6.

In this release version, a bug is reported. It is rectified and a patch for the same of length 1.57 KB is introduced. According to you, what is the new version ? Justify. (6)

(ii) What are the entities suitable for CASE repository and Why? Give different examples of real life. (10)

Or

(b) (i) The present version of a s/w is ABC 8.3.2.1.

After several modifications, the s/w underwent change for 23 KB. According to you, what will be the new version? Justify (6)

(ii) Draw the CASE Repository structure and explain the same. How it will improve the efficiency of s/w development? Illustrate with help of an application. (10)