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204404

May, 2019

BCA - IV SEMESTER

Software Engineering (BCA-17-209)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART–A

1. (a) How is software different from a program? (1.5)

(b) What do you mean by software reuse? (1.5)

(c) Differentiate between user and system requirements. (1.5)

(d) Differentiate between alpha, beta and acceptance testing. (1.5)

(e) What do you mean by debugging? (1.5)

(f) What is an SDLC? (1.5)

(g) What do you mean by project scheduling? (1.5)

(h) Differentiate between milestones and deliverables. (1.5)

(i) What is an SRS? (1.5)

(j) Differentiate between coupling and cohesion. (1.5)

PART–B

2. (a) What do you mean by Software Development Life Cycle? Explain why spiral model is better than other models. Sketch a neat diagram of spiral model and hence explain it. (10)

   (b) Enumerate the various types of risks associated with a software project. Hence explain risk assessment. (5)

3. (a) Create a use case model for library information system. (5)

   (b) Discuss the various types of requirements in software engineering. Discuss various techniques for requirements elicitation. (10)

4. Explain how intermediate COCOMO provides better estimation as compared to basic COCOMO? A project size of 100KLOC is to be developed. Software Development team has average experience on similar type of projects.

The project schedule is not very tight. Calculate the effort, development time, average staff size and productivity of project. Which is the most appropriate mode of COCOMO model used in this project? The values of coefficients are: a = 3.0, b = 1.12, c = 2.5, d = 0.35. (15)

5. (a) Explain the various types of software maintenance and hence explain the maintenance process. (5)

(b) Explain the various levels of testing. Consider the program for determination of next date in a calendar. Its input is a triple of day, month and year with the following range :

1 <= month <= 12

1<= day <= 31

1900 <= year <=2025

The possible outputs would be next date or invalid input date. Design boundary value test cases for this program thus showing the expected output also. (10)

6. (a) What are size metrics? How is function point metric advantageous over LOC metric? (5)

(b) Write at least five differences between Black Box Testing and White Box Testing. (5)

(c) What is the difference between software reengineering and reverse engineering? (5)

7. Differentiate between the following :

(a) Functional and non functional requirements.

(b) Function oriented design and object oriented design.

(c) Verification and validation. (15)
