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Total Number of Pages: 02

M.TECH
CSPC201

2nd Semester Regular/Back Examination – 2015-16
Software Engineering
Q.CODE:W760
Time: 3 Hours
Max marks: 70

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions: (2 x 10)
- a) Differentiate between evolutionary and throw-away prototyping.
 - b) Compare hardware reliability with software reliability.
 - c) Describe the difference between conceptual design and technical design.
 - d) What is the relationship between cyclomatic complexity and program comprehensibility? Can you justify why such an apparent relationship exist?
 - e) What is the difference between process metrics and product metrics? Give example of each.
 - f) What is stress testing? Why is stress testing applicable to only certain type of systems?
 - g) Why is the SRS document also known as the black-box specification of a system?
 - h) What is egoless programming?
 - i) The aggregation relationship cannot be reflexive and symmetric but is transitive. Justify
 - j) What are the importance of stub and driver in unit testing?
- Q2 a) Discuss selection process parameters for a life cycle model. Explain why the spiral life cycle model is considered to be a metamodel? (5)
- b) Write down the major differences between Basic COCOMO and COCOMO-II? Suppose that a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three modes i.e., organic, semidetached and embedded. (5)
- Q3 a) What is Risk? What is the important type of risks that a software project might suffer from? Explain different Risk Management activities. (5)
- b) Explain the Requirement elicitation and analysis phase. Give reasons why is it a difficult phase in requirement engineering process? (5)

Q4 a) What do you mean by software quality? Explain the different models used for assessment of quality of a software product. (5)

b) Distinguish between a “user-centered design” and “design by users”. Examine the pros and cons of these two approaches to user interface design. (5)

Q5 a) Define Boundary value Analysis. (5)

Consider a program for the determination of the nature of roots of a quadratic equation. Its input is a triple of positive integers (say a, b, c) and values may be from interval [0, 100]. The program output may have one of the following words:

[Not a quadratic equation; Real roots; Imaginary roots; Equal roots]
Design the boundary value test cases.

b) Schematically draw the architecture of a CASE environment and explain how different tools are integrated. (5)

Q6 a) Define Function Point Metric. (5)

Consider a project with the following functional units:

Number of user inputs = 50, Number of user outputs = 40, Number of user enquiries = 35, Number of user files = 06, Number of external interfaces = 04. Assume all complexity adjustment factors and weighting factors are average. Compute the function point for the project.

b) Differentiate between cohesion and coupling in context of software design .Explain different types of cohesion and coupling with examples. (5)

Q7 a) How structural testing is different from functional testing? Discuss the importance of path testing during structural testing. (5)

b) What do you mean by balancing a DFD? Illustrate your answer with a suitable example. (5)

Q8 Write short notes on any two. (5 x 2)

a) UML

b) Software Reengineering

c) Software Configuration Management

d) Critical Path Method(CPM)