Printed Pages : 4

EIT402

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0114

Roll No.

B.Tech.
(SEMESTER-IV) THEORY EXAMINATION, 2012-13
SOFTWARE ENGINEERING

Time : 3 Hours]

[Total Marks : 100

SECTION – A

1. Attempt **all** parts.

$10 \times 2 = 20$

(a) What are some of the indicators of software crisis ?

(b) How Software Engineering Processes are different from Conventional Engineering Processes ?

(c) Identify some problems associated with the implementation of a successful quality assurance plan in a software development organization.

(d) What do you mean by Unambiguous and Complete SRS ?

(e) What problems arise if two modules have high coupling ?

(f) Why is good design important for a software product ?

(g) Explain the role of recursive testing and its role in the integration testing.

(h) Can system testing be considered to be a structural testing ?

(i) Explain situations under which software re-engineering would be useful.

(j) Heavy maintenance and quality of a software product are inversely proportional. Explain.

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SECTION – B

2. Attempt any **three** parts. 10 × 3 = 30

(a) Spiral model is a realistic approach to the development of large-scale system and software. Justify and explain the model.

(b) What is requirement analysis ? What is its importance ? What does a software requirement specification document (SRS document) contain ? Explain.

(c) Define Coupling in the context of software design. What are the different types of coupling in practice ? Discuss them briefly. Also discuss why data coupling is the best form of coupling.

(d) What do you mean by Black Box Testing ? What are some considerations in this regard ? Discuss two methods of black box testing in detail.

(e) What are the generic types of cost models for software cost estimation ? Explain.

SECTION – C

Attempt **all** parts. 10 × 5 = 50

3. Attempt any **two** parts.

(a) How does the risk factor affect the spiral model of software development ?

(b) Explain what is meant by 'software crisis' and how they are handled.

(c) Differentiate between iterative Enhancement Model and Evolutionary Development Model.

4. Attempt any **two** parts.

(a) Which ISO quality assurance standard applies to software engineering ? How is it different from SEI-CMM model ?

(b) Why is SRS also known as the black-box specification of system ?

(c) Explain any two requirements elicitation methods.

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5.   Attempt any **two** parts.

 (a)   Compute function point value for a project with the following domain characteristics :

No. of I/P = 30

No. of O/P = 62

No. of user Inquiries = 24

No. of files = 8

No. of external interfaces = 2

Assume that all the complexity adjustment values are average. Assume that 14 algorithm have been counted.

 (b)   List the important shortcomings of LOC for use as a software size metric. Does the function point metric overcome these ? Explain your answer.

 (c)   For the flow graph shown in Fig. 1,

   (i)   Compute the cyclomatic complexity

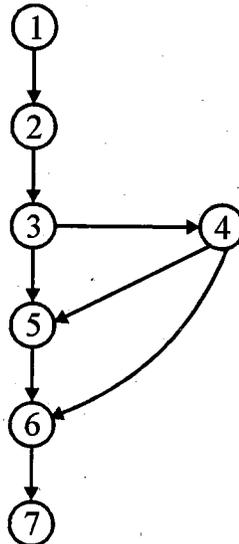   (ii)   Find out independent path

Fig. 1

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6. Attempt any **two** parts.

    (a) Explain the 'Walk Through' approach to software testing.

    (b) What do you mean by test-cases ? Explain, how will you design black-box test cases for a function named **func-quadratic-eqn. func-quadratic-eqn** accepts three floating point numbers representing a quadratic equation of the form $ax^2+bx+c=0$, it computes and displays the solution.

    (c) Explain what is meant by 'Integration testing' and 'Regression testing'.

7. Attempt any **two** parts.

    (a) Describe Version Control and Change Control in the context of Software Configuration Management.

    (b) Discuss the role of the data dictionary in a CASE environment. How automated support for data dictionary can be provided ? .

    (c) Differentiate corrective, adaptive, perfective and preventive maintenance in the context of software.

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