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

PAPER ID : 110602 Roll No. | | | | | | | | | | |

B.Tech.

(SEM. VI) THEORY EXAMINATION 2013-14

SOFTWARE ENGINEERING

Time : 3 Hours *Total Marks : 100*

Note : (i) Answer all questions.

(ii) All questions carry equal marks.

1. Attempt any **two** parts of the following **(2×10=20)**

(a) Draw neat sketch of Spiral Model and explain its different activities. What do the different cycles indicate in this model ? What are its advantages over traditional iterative process models ? Why is it not suitable for small projects ?

(b) What do you understand by coupling and cohesion ? What roles they play in software design ? Describe the properties of best coupling and cohesion giving examples of each.

(c) What do you understand by token count ? Consider a program having :

(i) Number of distinct operator: 12

(ii) Number of operands: 5

(iii) Total number of operator occurrences: 20

(iv) Total number of operand occurrences: 15

Calculate the different Halstead software metrics for above programs.

2. Attempt any **two** parts of the following **(10×2=20)**

(a) Consider a program that input two integers having values in range (10, 250) and classifies them as even or odd. For this program generate:

(i) Test cases using boundary values analysis

(ii) Equivalence class testing

(b) Why Requirements are hard to elicit ? Explain Requirements elicitation technique; use Case Diagram using example of Banking system.

(c) What is a data flow diagram ? Explain rules for drawing good data flow diagrams with the help of a suitable example.

3. Write short notes on any **four** of the following: **(5×4=20)**

(a) Software testing

(b) Software quality assurance

(c) Cyclomatic complexity measures

(d) IEEE standards for SRS

(e) SRS document

(f) CASE Tools

4. Attempt any **four** parts of the following **(5×4=20)**

(a) What is software quality ? What are three dimensions of software quality ? Explain briefly.

(b) Describe the differences between the software engineering terms coupling and cohesion.

(c) Why are evolutionary models considered by many to be the best approach to software development in a modern context ?

(d) What is a formal technical review and why is one conducted ? Outline the steps required to conduct a successful FTR.

(e) What are software process models ? Distinguish Iterative Enhancement model and Spiral model.

(f) What is Risk management ? How are project risks different from technical risks ?

5. Attempt any **four** parts of the following: **(5×4=20)**

(a) What is software maintenance ? Explain any two models of software maintenance.

(b) What are different techniques to estimate size of the program ? Which technique is better and why ?

(c) What are different CMM levels ? What does CMM level specify ? Explain briefly.

(d) Does fault necessarily lead to failures ? Justify your answer with an example.

(e) What is difference between reengineering and reverse engineering ? Explain different steps of reengineering.

(f) What are the attributes of a good software test ? Why is regression testing an important part of any integration testing procedure?