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**B. Tech. 6th Semester Information Technology
(F. Scheme) Examination,
May-2012**

PRINCIPLES OF SOFTWARE

Paper-CSE-302-F

Time allowed : 3 hours]

[Maximum marks : 100

1. (a) Define software engineering.
- (b) What is data dictionary ?
- (c) What do you mean by data modeling ? List out the factors of data modeling.
- (d) Differentiate between database and data warehouse.
- (e) Define basis path testing.
- (f) List out the various methods for finding the cyclomatic complexity.
- (g) What do you mean by cost impact of software defects ?
- (h) What steps are required to perform statistical SQA ?
- (i) Define CASE Tools.
- (j) List out the possible errors of black-box testing.

Section-A

2. (a) What is meant by software Process ? Explain in detail. 10
- (b) Explain the iterative enhancement model with the help of suitable example. 10
3. (a) What are project metrics ? Differentiate between size-oriented metrics and function-oriented metrics. 10
- (b) Discuss the common sources and types of risks in software development projects and strategies to deal with them. 10

Section-B

4. Explain the various types of cohesion and coupling in detail. Which one is the best and which one is the worst among them in case of both cohesion and coupling ? 20
5. (a) Define the following terms :
Abstraction, Refinement, Functional Independence,
Information Hiding. 10

- (b) Explain the complete architectural design process. 10

Section-C

6. (a) What is software testing ? Why do we test ? What are the different testing principles ? 10
- (b) Describe the equivalence class partitioning as used in software testing ? 10
7. (a) Differentiate between verification and validation ? 10
- (b) What do you mean by executable and non-executable testing ? 10

Section-D

8. (a) What do you mean by Software configuration management ? Discuss. 10
- (b) Describe the role of Formal Technical Review (FTR) as a quality assurance activity. How is it conducted ? 10

9. (a) Explain SQA activities in detail. 10
- (b) Why CASE approach is recommended in case of large complex software solution ? Comment how CASE approach affects the following : 10
- (i) Documentation
 - (ii) Programming Effort.