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

PAPER ID : 2475 Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VI) THEORY EXAMINATION 2011-12

SOFTWARE ENGINEERING

Time : 3 Hours *Total Marks : 100*

Note :—(1) Attempt ***all*** questions.

(2) All questions carry equal marks.

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

(a) (i) What is software engineering ? Discuss the main objectives of software engineering in brief.

(ii) Why does software needs to be a quality product ? What are the different attributes of software quality ?

(b) Explain about prototyping model of software development. What are the advantages of it over waterfall model ? Discuss.

(c) (i) What do you understand by term software crisis ? Discuss in brief.

(ii) Write short note on spiral model.

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

(a) What are the main activities carried out during requirements analysis and specification ? Discuss the

characteristics of a good software requirements specification document.

(b) What is Formal Technical Review (FTR) ? Discuss the importance of FTR in software development.

(c) Discuss the following :—

(i) SEI—CMM Model

(ii) Entity/relationship diagrams.

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

(a) Define the term software design. Also discuss the coupling in the context of software design. For a good design, the modules should have low coupling. Why ?

(b) Discuss the main advantages of using an object-oriented approach for software design.

(c) Write short notes on :—

(i) Software architecture

(ii) Software metrics.

4. Answer any ***two*** parts of the following :— **(10×2=20)**

(a) Why are three different levels of testing, unit testing, integration testing and system testing necessary ? Discuss the main purpose of each of these testing.

(b) What categories of errors are traceable using black-box testing ? Explain the black-box testing in detail.

(c) Write short notes on the following :—

(i) Coding standards

(ii) Verification and validation test.

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

(a) What do you understand by the term CASE tools ? Discuss the benefits of using CASE tools.

(b) What are the different types of software maintenance ? Why are these software maintenance required ? Discuss with examples.

(c) Discuss the following :—

(i) Reverse Engineering

(ii) Software Risk Analysis.