

### B3.3-R3: SOFTWARE ENGINEERING & CASE TOOLS

**NOTE:**

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

**Time: 3 Hours**

**Total Marks: 100**

1.
  - a) What are the function points? Bring out their main advantages.
  - b) What are the features of a testing CASE workbench?
  - c) What are the basic components of an Engineering Change Process?
  - d) How can you design high cohesion and low coupling modules?
  - e) What are the types of generic dependencies in an architectural design?
  - f) What is control structures required in Structured Programming?
  - g) Explain static testing tools.

**(7x4)**
2. Explain the terms systems approach and engineering approach in software? What are the basic differences between them? Why does the engineering approach not always work in software?

**(18)**
3. Explain the various types of prototyping models in software development. Explain where each model succeeds and where it fails.

**(18)**
4.
  - a) What are the generic types of cost models for software cost estimation?
  - b) You are the manager of a new project charged with developing a 100000 lines embedded system. You have a choice of hiring from two pools of developers: highly capable with very little experience in the programming language being used or developers of low quality but a lot of experience with the programming language. What is the impact of hiring all developers from one or the other group?

**(12+6)**
5. What are the baselines and CRs in context of configuration management? How are CRs processed? Explain with any suitable example.

**(18)**
6. What are the class candidates in OOD? How do you decide on whether a class should be included or not? Explain the steps in CRC modelling in OOD.

**(18)**
7.
  - a) Explain software reliability and the principal factors that affect it.
  - b) Define the maintenance process. Explain Boehm's model.

**(6+12)**