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Total number of printed pages – 2

B. Tech  
PCIT 4302(New)

**Sixth Semester (Back) Examination – 2013**

**SOFTWARE ENGINEERING**

**BRANCH : IT**

**QUESTION CODE : B 316**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any **five** from the rest.*

*The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2×10
- What do you mean by a process model ?
  - What do you mean by a software life cycle ?
  - What are the major shortcomings of iterative waterfall model ?
  - Define Is-A relationship and Has-A relationship.
  - What is structured chart ?
  - List 3 common types of risks that a typical software project might suffer from.
  - What according to you categorizes a good software design ?
  - What do you mean by web engineering process ?
  - What is the difference between black box testing and white box testing ?
  - What is Bang Metrics ?
2. (a) Discuss the major phases in the Waterfall model of Software development. Which phase consumes the maximum effort for developing a typical software product ? 5
- (b) Explain the requirement inception and requirement elaboration in the context of software requirement engineering. 5

**P.T.O.**

3. (a) What do you mean by cohesion and coupling in the context of software design ? How are these concepts useful in arriving at a good design of a system ? 5
- (b) Discuss Rumbaugh's Object Modelling Technique with suitable example. 5
4. (a) Discuss the major differences between the function oriented and the object oriented approaches to software design. Corroborate your answer through suitable examples. 5
- (b) Explain with example how mapping of a DFD into structure chart is done. 5
5. (a) With help of suitable example, explain how the inheritance feature of the object oriented paradigm helps in code reuse. 5
- (b) What are the different system views that can be modeled using UML? Discuss the different UML diagrams which can be used to capture each of these views. 5
6. (a) What do you mean by system testing ? What are the different kinds of system testing that are usually performed on large software products ? 5
- (b) Design the black box test suite for a program that accepts two strings and checks if the first string is a substring of the second string and displays the number of times the first string occurs in the second string. 5
7. (a) Draw a class diagram using UML to represent the fact that an order Register consists of many orders. Each order consists of up to ten items. Each order item contains the name of the item, its quantity and the date by which it is required. Each order item is described by an item order specification object having details such as its vendor address, its unit price and manufacturer. 5
- (b) Explain project estimation techniques with suitable examples. 5
8. Explain the following terms in brief : 4×2.5
- (a) The Spiral Model
- (b) Integration testing
- (c) Jacobson's Model
- (d) Web Metrics