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Total number of printed pages – 2

B. Tech  
PCIT 4302

**Sixth Semester Regular / Back Examination – 2015**

**SOFTWARE ENGINEERING**

**BRANCH : IT**

**QUESTION CODE : J 209**

**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
  - (a) What do you mean by a software process ?
  - (b) What is meant by a software life cycle ?
  - (c) Give an example of a software product development project for which the iterative waterfall model is not suitable.
  - (d) Distinguish between a data flow diagram and a flow chart.
  - (e) What are the main shortcomings of DFD as a tool for performing structured analysis ?
  - (f) What is the difference between black box testing and white box testing ?
  - (g) What is Bang Metrics ?
  - (h) What do you mean by web engineering process ?
  - (i) Define Is-A relationship and Has-A relationship.
  - (j) What is structured chart ?
2. Explain with diagram the iterative waterfall model of software development. On your diagram, represent the deliverables that need to be produced at the end of each phase. 10
3. (a) Explain the requirement inception and requirement elaboration in the context of software requirement engineering. 5

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- (b) 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
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) How are the abstraction and decomposition principles used in developing a good software requirements specification ? 5
5. (a) Explain with a suitable example how a DFD model of software can be created from its source code. 5
- (b) Design the black box test suite for a function named **Quadratic Solver**. Quadratic Solver accepts 3 floating point numbers (a,b,c) representing a quadratic equation of the form  $ax^2 + bx + c = 0$ . It computes and displays the solution. 5
6. (a) 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
- (b) Discuss in brief the different reliability metrics. Draw the diagram for reliability growth model. 5
7. (a) What is unified process ? What are the different phases of the unified process ? What activities are carried out during each phase of the unified process ? 5
- (b) Discuss the process models for software maintenance and indicate how you would select an appropriate maintenance model for a maintenance project at hand. 5
8. Write short notes on any **two** : 5×2
- (a) 'V' model
- (b) COCOMO
- (c) Use-Case Realization
- (d) Web Metrics.

