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Total Number of Pages: 02

B.TECH
PCIT4302

6th Semester Regular / Back Examination 2015-16

Software Engineering

BRANCH: IT,ITE

Time: 3 Hours

Max Marks: 70

Q.CODE: W206

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

- Q1** Answer the following questions: **(2 x 10)**
- a) What do you mean by balancing a DFD?
 - b) What are the characteristics of a good software design?
 - c) Why is it required to have a module having high cohesion and low coupling?
 - d) What is a *Context* diagram?
 - e) What do you mean by an organic project? Give an example.
 - f) Explain *lifeline* in a sequence diagram?
 - g) What is McCabe's *cyclomatic complexity* metric?
 - h) What is the need of *Stub* module in unit testing?
 - i) Differentiate between *black-box* testing and *white-box* testing.
 - j) List the shortcomings of LOC for the use as a software size metric.
- Q2** a) What is the importance of process models in software development? List out the parameters to choose appropriate process model for a software project. **(5)**
- b) Describe Prototyping method of software development. Under what circumstances prototyping method is appropriate over other methods? **(5)**
- Q3** a) How Object Oriented Analysis and Design (OOAD) differ from function oriented design? List out the different types of design classes in OOAD. **(5)**
- b) Draw the Use Case diagram for a standard ATM transaction. **(5)**
- Q4** What are the types of software metrics? Explain briefly MOOD metrics for object-oriented design. **(10)**

Q5 a) What is requirement engineering? Write down the activities involved in requirements engineering. (5)

b) Write down the characteristics of a good SRS. (5)

Q6 a) What is COCOMO? Write down the major differences between basic COCOMO and COCOMO-II? (5)

b) The size of an organic software product has been estimated to be 40,000 lines of source code. Suppose the average salary of software Engineers be Rs. 12,000/- per month. Determine effort, nominal development time, and cost involved in developing the project. (5)

Q7 a) Explain activity diagram with a suitable example. How it differs from a flow chart? (7)

b) What is *swimlane* in an activity diagram? (3)

Q8 Write short notes on any two: (5 x 2)

a) Association vs. Aggregation

b) Verification vs. Validation

c) Function Point metrics

d) Sequence diagram vs. Collaboration diagram