

Total number of printed pages

MCA
PCS 3004

Fourth Semester Examination – 2006
SOFTWARE ENGINEERING & OOAD

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 for the questions.

1. Answer the following questions : 2×10
- (a) What is the principal aim of the software engineering ? Draw the pyramid diagram for OOSE Architecture.
 - (b) What are the three different kind of testing associated with System testing ?
 - (c) What are the prominent qualities of System Design with OO method ?

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- (d) What do you mean by software process ?
- (e) What is the role of data dictionary in CASE environment ?
- (f) Differentiate between object oriented analysis and object oriented design ?
- (g) Define the term cohesion in the context of object-oriented design of systems.
- (h) What are the advantages of encapsulation ?
- (i) What is the difference between a coding standard and a coding guideline ?
- (j) What is meant by a code walk-through ?
2. (a) Why should a requirement analyst avoid making any design decisions during requirements analysis ? Must a good programmer also be a good requirement analyst ? 5
- (b) Discuss the major advantages of object oriented design methodologies over the data flow oriented design methodologies. 5
3. (a) What is meant by structural complexity of a program ? Define metric for measuring structural complexity of a program. How this is different from the computational complexity of a program ? 5

- (b) Draw a data flow diagram for the inventory of a large medicine store. 5

4. (a) Why is it important to properly document a software product ? What are the different ways of documenting a software product ? 5

- (b) What is stress testing ? Why is stress testing applicable to only certain types of systems ? 5

5. (a) What is regression testing ? Why regression testing is necessary ? How is regression testing performed ? 5

- (b) Discuss the relative merits of ISO 9001 certification and SEI CMM-based quality assessment. 5

6. (a) What are the different type of views that can be modeled using UML ? What are the different UML diagrams which can be used to capture each of the views ? 5

- (b) What do you mean by repeatable software development ? Organizations assessed at which level of SEI CMM maturity achieves repeatable software development ? 5

- 7 ✓ (a) Discuss how the reliability changes over the lifetime of a software product. 5
- ✓ (b) How cohesion and couplings are related? Give an example where cohesion increases and coupling decreases. 5
- 8 ✓ (a) Define and differentiate between software engineering and software reengineering. 2.5
- ✓ (b) If a module has a logical cohesion, what kind of coupling is this module likely to have with others? 2.5
- ✓ (c) Define the metrics to measure software reliability? 2.5
- ✓ (d) Define and differentiate between CASE tool and a CASE environment. 2.5

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