

Fourth Semester Examination, April - 2005

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 : 2×10
- (a) Which phases in the Waterfall life cycle model consumes the maximum effort for developing a typical software product ?
 - (b) Which parameter (s) is/are used in COCOMO estimation model ?
 - (c) Who is responsible for developing the SRS document ?

P.T.O.

- (d) What is the difference between revision and version ?
- (e) What is the *object persistence* ? How a persistent object can be realized ?
- (f) Is the UML (Unified Modeling Language) is strictly a language ? Justify your answer.
- (g) What is Rapid Application Development (RAD) ?
- (h) What do you mean by smoke testing ?
- (i) What is pattern in object-oriented analysis and design ?
- (j) What do you mean by Key Process Areas (KPAs) in the context of SEI CMM ?
2. (a) Draw a schematic diagram to represent the iterative waterfall model of software development.
- (b) On your diagram represent the deliverables produced at the end of each phase. 6+4
3. (a) What are the different categories of software development projects according to the COCOMO model ?
- (b) What are the relative advantages of using either the LOC or the function point metric to measure the size of a software product ? 5+5

4. The system analysis group working on a system design project estimated the schedule of activities as given below :

| Activity | Notation | Must Follow | Expected Time (Days) |
|--------------------------|----------|-------------|----------------------|
| Draw DFD | A | None | 9 |
| Draw Decision Tree | B | A | 12 |
| Revise tree | C | B | 3 |
| Write up report | D | C, H | 7 |
| Organize Data Dictionary | E | A | 11 |
| Do output prototype | F | None | 8 |
| Revise Design | G | F | 14 |
| Design database | H | E, G | 5 |

- (a) Draw PERT diagram based on the above-mentioned data.
- (b) List all paths and identify the critical path. 6+4
5. (a) What do you mean by the term cohesion and coupling in the context of software design ?

- (b) Why high coupling and low cohesion in a design are preferable ? 6+4
6. Explain with appropriate examples the following :
- (i) DFD
 - (ii) Structure chart
 - (iii) Data Dictionary 4+3+3
7. (a) What do you mean by the following views a system ?
- (i) User's view
 - (ii) Structural view
 - (iii) Behavioral view
 - (iv) Implementation view
 - (v) Environmental view 10
8. (a) Schematically draw the architecture of a CASE environment and explain how the different tools are integrated.
- (b) What do you mean by the term "Software Reengineering" ? Why it is required ? 5×2