**Advanced Diploma in Information Technology (ADIT) /
Bachelor in Information Technology (BIT)**

Term-End Examination

December, 2007

CST-204 : ADVANCED TOPICS IN SOFTWARE ENGINEERING

Time : 3 Hours   *Maximum Marks : 75*

Note :   *There are **two** sections in this paper. Section A is **compulsory**. Questions number 1 to 10 carry 1 mark each. Questions number 11 to 14 carry 5 marks each. Answer any **three** questions from Section B. Each question of Section B carries 15 marks.*

SECTION A

1. The degree to which full implementation of required function has been achieved is indicated by the following metric :   *1*

    (a) Auditability

    (b) Completeness

    (c) Consistency

    (d) Training

2. _____ testing focuses on the smallest unit of software design.   *1*

    (a) Unit   (b) Integration

    (c) System   (d) Black box

3. _____ is the most expensive phase of the software life cycle.   *1*

    (a) Analysis   (b) Maintenance

    (c) Design   (d) Coding

4. _____ creates an effective communication medium between a human and a computer.   *1*

    (a) User interface   (b) System software

    (c) Real Time software   (d) Any software

5. _____ is a set of design steps that allow a DFD with transform flow characteristics to be mapped into a specific architectural style. *1*

   (a) Entity

   (b) Algorithm

   (c) Transform mapping

   (d) Transaction mapping

6. _____ is a measure of interconnection among modules in a software structure. *1*

   (a) Cohesion

   (b) Coupling

   (c) Path

   (d) Complexity

7. _____ defines the maximum number of objects that can participate in a relationship. *1*

   (a) Cardinality

   (b) Modality

   (c) Connection

   (d) Class

8. _____ are the objectives and goals that are stated for a product or system during meetings with the customer. *1*

   (a) Normal requirements

   (b) McCall's factors

   (c) Programs

   (d) Validation criteria

9. A _____ works to understand system requirements by working with the customer, prospective users, and other stake holders. *1*

   (a) Software Engineer

   (b) System Engineer

   (c) Hardware Engineer

   (d) All of the above

10. The project must be compartmentalized into a number of manageable _____ and
_____ .

1

(a) activities, tasks

(b) inpaths, outpaths

(c) modules, packages

(d) None of the above

11. Assume that you are a Systems Analyst and need to develop a Student Information
System (SIS). Write at least five requirements for SIS.

5

12. Define the five process maturity levels that measure a company's software engineering
practices.

5

5

13. Differentiate between operational and technical feasibility.

5

14. What is meant by Outsourcing ? Write at least two advantages of outsourcing.

SECTION B

*Answer any **three** questions from this section.*

15. Explain the parameters based on which it is decided that which S/E development model out of spiral model, prototype model, and RAD model should be followed for any application. Justify your answer with the help of the example of "Hospital Management System". 15

16. (a) Explain the significance of testing in software project development. What are the phases of GUI testing ? 10

    (b) Explain the role of Systems Analyst in software project development. 5

17. What is meant by Software Configuration Management ? Indicate any four developments that may lead to change of software system. 15

18. (a) Make a context level and first level DFD of "Online Business Transaction System". 8

    (b) Discuss various program coordination techniques. 7