

MCA (Revised)
Term-End Examination
June, 2007

**MCS-014 : SYSTEMS ANALYSIS AND
DESIGN**

Time : 3 hours

Maximum Marks : 100

(Weightage 75%)

Note : Question number 1 is **compulsory**. Answer any **three** questions from the rest.

1. (a) Prepare a SRS for a "Railway Reservation System". Design the DFD for the context level, first level and second level for the system. Follow the rules/conventions given in your study material to draw the DFDs. 10

- (b) What is the significance of the prototype approach ? Mention the steps for the prototype design with the help of the flow diagram. Also, list the advantages and disadvantages of this approach. 10

- (c) “The design principles are meant to effectively handle the complexity of the process of design.” List and explain all the design principles. Also, explain the top-down design approach with the help of “an inventory system” design. 10
- (d) Describe the aims of the following testing techniques : 10
- (i) Stress testing
 - (ii) Performance testing
 - (iii) Response testing
 - (iv) Recovery testing
 - (v) Security testing
2. (a) What are the various components associated in a Entity-Relationship diagram ? List the various symbols used and their purpose of use. Also, draw an ERD for a “Pay slip generation” application. Assumptions can be made wherever necessary. 10
- (b) Define an Expert system. Mention the basic characteristics of the expert systems. Also describe various components of them. 10
3. (a) What are CASE tools ? List the broad classification of various types of CASE tools and their usage. 10
- (b) Define Systems Audit. List the objectives of it. Discuss the issues involved in Transaction, Security and Application audits. 10

4. (a) Elaborate the role of the Systems Analyst in the overall system development. Also, discuss the inter-personal skills that s/he should possess. 10
- (b) Why are software documentation standards followed in any organization ? Explain any three documentation standards, mentioning their high-points. 10
5. Explain the following : 4×5=20
- (i) Cost-Benefit Analysis
 - (ii) Data Coupling
 - (iii) Criteria for the form design
 - (iv) Sequence diagrams

