

MCA (Revised)

Term-End Examination

December, 2013

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

Time : 3 hours

Maximum Marks : 100

(Weightage: 75%)

Note : Question No.1 is compulsory. Attempt any three questions from the rest.

1. (a) Explain how both waterfall model and prototyping model can be accommodated in the spiral process model. 10
- (b) A program is to be developed to simulate the operations of a scientific calculator. List the facilities to be provided by this calculator. Analyze this using a DFD 0 - level and 1 - level diagram. 10
- (c) Give full form of CASE. Draw CASE diagram showing all components. Describe each component briefly. 6
- (d) Distinguish between Analysis and Design. Explain with example. 10
- (e) Explain the following terms : 2x2=4
 - (i) Debugging
 - (ii) Cost - Benefit Analysis.

2. (a) Draw ER diagram for the following situation : 6
 An account is a relationship between a customer and a bank. A customer has a name. A bank has a branch. A customer may have several accounts of different types and balance.
- (b) Describe characteristics of a good interface. 8
 List some guidelines to design output screens, icons and graphics.
- (c) Why is documentation important to information system life cycle ? Explain. 6
 Also describe the term program specification in brief. What information does it convey ?
3. (a) Explain the term 'Expert System'. Briefly explain the characteristics of an expert system. Give an example. 8
- (b) Why is maintenance of a software important ? Discuss some of the problems that are faced during maintenance of software. 6
- (c) Differentiate between software Re-engineering and software Reverse Engineering. Explain their need with suitable examples. 6
4. (a) Explain the difference between a structured interview and an unstructured interview ? When is each type of interview appropriately used ? 6
- (b) Explain the following (with an example). 6
 (i) Inheritance Diagram
 (ii) Aggregation Diagram

- (c) Prepare SRS for an “Inventory Management System” for a retail medical store. **8**
Also explain the Risk assessment and management in brief.
Make necessary assumptions.
5. (a) Explain various types of file organization. **6**
Differentiate between a master file and a transaction file.
- (b) Differentiate between the following : **4x2=8**
(i) Batch and Online Transaction Processing.
(ii) TPS and DSS
- (c) Describe the aims and methodology of the following testing techniques : **3x2=6**
(i) Black Box Testing
(ii) White Box Testing
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