

MCA (Revised) / BCA (Revised)

Term-End Examination

December, 2018

MCS-014(S) : SYSTEMS ANALYSIS AND DESIGN

Time : 3 hours

Maximum Marks : 100

(Weightage : 75%)

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

1. (a) Explain the advantages and disadvantages of the following software development models : 9

(i) Waterfall

(ii) Prototype

(iii) Spiral

(b) What are the advantages of DFDs ? Draw DFDs of level-0 and level-1 for *online examination system* in which examinations are conducted using multiple choice questions and true/false questions. Make necessary assumptions. 10

- (c) Explain why a system analyst should be familiar with technical skills. Also list any five technical skills which may be used by a system analyst. 6
- (d) Explain data coupling with the help of an example. 5
- (e) What is an expert system ? Explain its two advantages and two disadvantages. 5
- (f) What is MIS ? Explain any two functions of MIS in a business organization. 5
2. (a) Explain various roles of a system analyst in modern business. 8
- (b) Explain the need of feasibility study for the development of an enterprise application system. Explain various issues involved in operational feasibility. 8
- (c) What is risk analysis ? Explain quantitative risk analysis. 4

3. (a) What is software re-engineering ?
How is it different from software reverse-engineering ? Explain the advantages of both. 10

(b) Draw ER Diagram for the following situation : 10

An account is a relationship between Customer and Bank. A customer may have multiple accounts of different types (but only one account of one type). Each customer belongs to a branch of bank. Different types of accounts require different minimum balances. A customer may transfer money from one account to another account owned by him/her. Make necessary assumptions.

4. (a) Explain the following with an example of each : 2×5=10

(i) Use case diagram

(ii) Class diagram

(b) What is a CASE tool ? How are CASE tools useful in different aspects of software engineering projects ? Also briefly explain any two disadvantages of CASE tools. 10

5. Write short notes on the following :

4×5=20

- (a) **Software Maintenance**
 - (b) **User Interface Design**
 - (c) **Real Time Systems**
 - (d) **Software Documentation**
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