

Dr. Babasaheb Ambedkar Open University
Term End Examination July – 2026

Course	: BCA	Date	: 12-07-2026
Subject Code	: BCAMA-402	Time	: 03:00pm to 05:15pm
Subject Name	: System Analysis and Design	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) (30)

1. What is a System? Discuss the key characteristics and the elements of a system that must be considered by an analyst.
2. Explain the System Development Life Cycle stages. Describe the importance of project selection and feasibility study in the system development process.
3. What are the different fact-finding techniques used in system analysis? Compare the effectiveness of interviews, questionnaires and observation in data collection.
4. Explain the role of Data Flow Diagrams and Data Dictionaries in structured analysis. Explain the symbols used in DFDs and why they are essential for documentation.
5. What are the objectives of the System Design phase? Explain the concepts of Modularization, Coupling and Cohesion in the context of software design.

Section B

Answer the following (Attempt any four) **(20)**

1. Differentiate between Formal and Informal information systems within an organization.
2. Explain the difference between Sequential and Indexed-Sequential file organization methods.
3. Discuss the primary objectives of a Database Management System (DBMS) in a professional environment.
4. Explain the difference between Direct Cutover and Parallel Systems conversion methods.
5. What is the purpose of cost/benefit analysis? Differentiate between tangible and intangible costs/benefits.
6. Describe the role of an Audit Trail and how it ensures proper system control.

Section C

Part – A (Multiple Choice Questions) (10)

- Which term describes the grouping of interdependent components linked by a plan?
 - Process
 - System
 - Module
 - Interface
- Which tool is used to describe the logic of a decision process sequentially?
 - Data Dictionary
 - Decision Tree
 - Flowchart
 - DFD
- Which of the following is a method for evaluating project costs and benefits?
 - Payback Analysis
 - Module Size
 - Coupling
 - Cohesion

4. In a DFD, what does an open rectangle symbol typically represent?
A. Process B. Data Flow
C. Data Store D. External Entity
5. Which phase of SDLC includes user training and file conversion?
A. Analysis B. Design
C. Implementation D. Maintenance
6. Which relationship allows one parent entity to be associated with many child entities?
A. 1:1 B. 1:M
C. M:M D. None
7. Which type of memory is volatile and loses data when power is off?
A. ROM B. PROM
C. RAM D. EEPROM
8. What does TCO stand for in cost analysis?
A. Total Cost of Operations B. Total Cost of Ownership
C. Total Company Output D. Total Computer Order
9. Which testing level focuses on the compatibility of individual system modules?
A. Unit Testing B. Integration Testing
C. Peak Load Testing D. Human Factors Testing
10. Which logic gate is considered a 'Universal Gate'?
A. AND B. OR
C. NAND D. NOT

Part - B (Do as Directed)

10

1. Write the full form of SDLC.
2. A Data Flow Diagram describes how a system processes data physically. (True/False)
3. The 'Data Dictionary' is a structured repository of data about data. (True/False)
4. Write the full form of DFD.
5. A 'Decision Table' is a representation of relationships between conditions and actions. (True/False)
6. 'Intangible costs' are easily measured in monetary terms. (True/False)
7. Write the full form of MIS.
8. Cohesion helps in grouping data to minimize redundancy. (True/False)
9. The condition symbol in a DFD is typically a circle or bubble. (True/False)
10. Name one primary source of a system project request.
