

2023

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : SAD-403

(System Analysis and Design)

Full Marks : 70

Pass Marks : 45%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 45)

*The figures in the margin indicate full marks
for the questions*

1. (a) Explain top-down and bottom-up design along with diagram. Give one disadvantage and advantage of top-down approach. 4+1=5
- (b) Explain structured English with an example. 4

Or

A Garment house provides a trade discount of 45 percent if a customer buys 7 or more pairs of Jeans. For orders from

shops 10 percent discount is allowed on order of 7-19 pairs of Jeans, 20 percent on order of 20-49 Jeans, 30 percent on orders for 50 jeans or more.

Design a decision tree and decision table for the above problem.

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2. (a) What are the different types of symbols and notation used in an ER diagram? Elaborate different types of cardinal relationship in an ER model. 2+3=5

- (b) What is the role of database administrator? 4

Or

- (a) How to perform cost-benefit analysis and why is it important? 5

- (b) Explain the objective of a good database design. 4

3. (a) What do you understand by white-box testing and black-box testing? How do they differ? 5

- (b) Write a short note on Nassi-Shneiderman charts. 4

Or

- (a) Explain Dual system method and Pilot approach method along with its advantages. 5

- (b) Write short notes on the following : 4

(i) Error avoidance

(ii) Error detection

4. (a) Explain the different phases in OO development life cycle along with its diagram. 5

- (b) Define the terms 'inheritance' and 'polymorphism'. Give suitable example. 4

Or

- (a) What do you understand by the term 'computer virus'? Explain the preventive and treatment measures of viruses. 5

- (b) Briefly explain any four UML diagrams. 4

5. (a) Define TPS. Explain the concept of TPS in detail with an example. 5

- (b) Write a short note on the role of management information system in organization. 4

Or

- (a) What is the main objective of MIS? What are the activities involved in system approach to MIS? 2+3=5

- (b) Write a short note on management. 4

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(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper : SAD-403

(**System Analysis and Design**)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

(a) SDLC stands for

- (i) System Development Life Cycle ()
- (ii) Secure Development Life Cycle ()
- (iii) Software Development Life Cycle ()
- (iv) Both (ii) and (iii) ()

(b) A Decision table facilitates conditions to be related to

(i) actions ()

(ii) programs ()

(iii) tables ()

(iv) operation ()

(c) The records in a file or magnetic tape

(i) can only be accessed serially ()

(ii) have to be arranged in a key sequence ()

(iii) are meant for backup ()

(iv) cannot be transferred to a disk file ()

(d) In ER diagrams dashed ellipses are used to denote

(i) derived attributes ()

(ii) multivalued attributes ()

(iii) weak entity sets ()

(iv) relationship sets ()

(e) The black-box concept is based on the assumption(s) that

(i) the super system is stable ()

(ii) black-boxes are dependent on environment ()

(iii) the relationship between the input and output is stable ()

(iv) None of the above ()

(f) HIPO charts facilitate

(i) analysis of modules ()

(ii) top-down design ()

(iii) organizational structure ()

(iv) None of the above ()

(g) In UML diagram of a class

(i) state of an object cannot be represented ()

(ii) state is irrelevant ()

(iii) state is represented as an attribute ()

(iv) state is represented as a result of operation ()

(h) An audit trail

- (i) is used to make backup copies ()
- (ii) is the recorded history of operations performed on a file ()
- (iii) can be used to restore lost information ()
- (iv) None of the above ()

(i) A Decision Support System (DSS) is an application for information system which helps in

- (i) decision making ()
- (ii) making system ()
- (iii) system implementation ()
- (iv) system flow ()

(j) An MIS is required because

- (i) the size of organization has become larger ()
- (ii) timely decision has to be taken based on available data ()
- (iii) computer are available ()
- (iv) it is difficult for clerks to process data ()

2. Indicate whether the following statements are True (T) or False (F) by putting a Tick (✓) mark : 1×5=5

(a) Documentation of a program is a continuous process.

(T / F)

(b) Each data flow in DFD has a corresponding entry in the Data dictionary.

(T / F)

(c) Object-oriented techniques promote reuse of code.

(T / F)

(d) An audit trail is established in a system to detect errors or bugs in a system.

(T / F)

(e) The main objective of MIS is to provide the right information to the managers.

(T / F)

(6)

3. Answer the following questions in short: $2 \times 5 = 10$

(a) What is SRS?

(7)

(b) Differentiate between NPV and RDI.

(8)

- (c) What are the levels of quality assurance? What do you understand by the term 'validation'?

(9)

- (d) Define the term 'virus scanner' and 'vaccine'.

(10)

(e) What do you mean by Information Reporting System (IRS)?
