

MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-II : WINTER : 2024
SUBJECT: DATA WAREHOUSING & DATA MINING

Day : Monday
Date : 02/12/2024

W-26129-2024

Time : 02:00 PM-05:00 PM
Max. Marks : 100

N.B.:

- 1) Attempt **ANY FIVE** questions from Section – I and attempt **ANY TWO** questions from section – II.
- 2) Answers to both the sections should be written in **SAME** answer books.
- 3) Draw neat and labelled diagram **WHERE-EVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

SECTION – I

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|------------|--|------|
| Q.1 | Discuss various Partitioning methods of Cluster analysis. | [12] |
| Q.2 | Explain applications of Data Mining in the education domain. | [12] |
| Q.3 | What is Data Warehouse? Discuss Three-Tier architecture in detail. | [12] |
| Q.4 | What is Market Basket Analysis? Explain Apriori Algorithm in detail. | [12] |
| Q.5 | Explain Classification method with Decision Tree. | [12] |
| Q.6 | Write short notes on ANY TWO of the following: | [12] |
| | a) Data mart | |
| | b) Outlier analysis | |
| | c) Binning Method | |

SECTION – II

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|------------|--|------|
| Q.7 | a) Explain Snow Flake Schema with example. | [10] |
| | b) Discuss Classification of metadata and its importance. | [10] |
| Q.8 | Explain and write steps for K-means algorithm, and explain K-medoids partitioning method used for clustering. | [20] |
| Q.9 | The BV University wants to maintain record the marks for the courses completed by students using the following dimensions:
i) Course ii) Student iii) Time
and measures - Aggregate Marks.
Create a cube and perform the following OLAP operations:
1) Roll-up 3) Slice 5) Pivot
2) Drill down 4) Dice | [20] |

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-II : WINTER : 2024
SUBJECT: OBJECT ORIENTED SOFTWARE ENGINEERING

Day : Monday
Date : 25/11/2024

W-26126-2024

Time : 02:00 PM-05:00 PM
Max. Marks 100

N.B.:

- 1) Attempt **ANY FIVE** questions from Section – I and **ANY TWO** questions from Section – II.
- 2) Answers to both the section should be written in **SAME** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Define Software Engineering. Explain Rapid Application Development Model (RAD) in detail. (12)
- Q.2** What is Unified Modelling Language (UML)? Explain different types of UML Diagrams. (12)
- Q.3** a) Describe the role of Class Diagram in Domain Modelling. (12)
b) What is Use Case Diagram? Explain 'Extend' and 'Include' relationship in Use Case diagram with example.
- Q.4** What are different elements of Collaboration Diagram? Explain its need with example. (12)
- Q.5** Explain the following concepts with examples (12)
a) Encapsulation.
b) Inheritance.
c) Polymorphism.
d) Abstraction.
- Q.6** Write short notes on (**ANY TWO**): (12)
a) Generalization and Specialization
b) Message types in Sequence Diagram
c) Component Diagram

SECTION – II

- Q.7** Draw a Class Diagram for the system described below: (20)
Electronic desk is a system that provides following services:
a) A blotting pad: It holds a document that the user is currently working on. It provides basic word processing facilities.
b) A filing cabinet: It is divided into drawers and each drawer divided into folders. The documents can be stored in drawers and folders.
c) A mail service: It allows the user to send or receive mails. There are IN and OUT trays provided. These trays send and receive mails along with attached documents.
- Q.8** Draw a Sequence Diagram for an ATM machine. Make your own assumptions. (20)
- Q.9** Create a Use Case Diagram for Credit Card Processing System (Credit Card Payment). The merchant submits a credit card transaction request to the credit card payment gateway on behalf of a customer. The bank which issued customer's credit card is actor which could approve or reject transaction. If transaction is approved, funds will be transferred to merchant's bank account. (20)
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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-II : WINTER : 2024
SUBJECT: DATA STRUCTURES USING PYTHON

Day : Wednesday
Date : 27/11/2024

W-26128-2024

Time : 02:00 PM-05:00 PM
Max. Marks : 100

N.B.:

- 1) Attempt any **FIVE** questions from Section – I and Attempt any **TWO** questions from Section – II.
- 2) Answers to both the sections should be written in the **SAME** answer book.
- 3) Figures to the right indicates **FULL** marks.

SECTION – I

- Q.1** Explain working of if, if-else and if-elif statements in python with example. (12)
- Q.2** State the sequential data types in python with brief description of each and describe methods of any one type. (12)
- Q.3** Explain the mechanism of exception handling in Python with example. (12)
- Q.4** What is ADT? Define and implement an ADT Rational to represent rational number. (12)
- Q.5** What do you know about Asymptotic notations? Describe Big 'O' notations. (12)
- Q.6** Write short notes on any **TWO** of the following: (12)
- a) Red-black Tree
 - b) Selection Sort
 - c) Recursion
 - d) 'with' clause in file handling

SECTION – II

- Q.7** What is the Linked List? Explain the application linked list for Polynomial arithmetic. (20)
- Q.8** When to use binary search tree? Define binary search tree as ADT. Write code to implement binary search tree (with addition and deletion of node). (20)
- Q.9** On which methodology the Quick sort is based on? With demo data explain working of this methodology. Write Python code to implement Quick sort. (20)

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-II : WINTER : 2024
SUBJECT: CLOUD COMPUTING CONCEPTS

Day : Friday
Date : 29/11/2024

W-26127-2024

Time : 02:00 PM-05:00 PM
Max. Marks : 100

N.B.

1. Attempt **ANY FIVE** questions from Section – I and **ANY TWO** questions from Section II.
2. Figures to the **RIGHT** indicate **FULL** marks.
3. Answers to both the sections should be written in the **SAME** answer book.

SECTION – I

- Q.1** Define cloud computing. Explain various benefits of cloud computing. (12)
- Q.2** Describe Infrastructure as a Service (IaaS) with its characteristics. (12)
- Q.3** What is virtualization? Explain role of virtualization in enabling cloud computing. (12)
- Q.4** Explain Service Oriented Architecture SOA in detail. (12)
- Q.5** What are various technologies and services required when deploying web services on cloud? (12)
- Q.6** Write short notes on **ANY TWO** of the following : (12)
- a) Public cloud
 - b) SaaS
 - c) MS Azure
 - d) Cloud economics

SECTION – II

- Q.7** Fortune University wants to migrate from its traditional systems to cloud system, university wants to automate cloud-based platform that streamlines the university application and admissions process for students all over the world, intuitive dashboards, progress tracking, task management tools, student career planning, user management and build financial plans all in one place. Suggest cost effective cloud solution to Fortune University. (20)
- Q.8** List various criteria that can be considered to choose the most appropriate cloud service provider. (20)
- Q.9** Describe in brief how cloud computing can help financial institutions to improve performance in number of ways. (20)
