MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)

M.C.A. Sem-II :SUMMER : 2023

SUBJECT : OBJECT ORIENTED SOFTWARE ENGINEERING

Day : Wednesday | Time : 02:00 PM-05:00 PM

Date : 3/5/2023 | **S-26126-2023** | Max. Marks : 100

N.B.

1) Attempt any **FIVE** questions from **SECTION** I Each question carries **12 Marks.**
2) Attempt any **TWO** questions from **SECTION** II Each question carries **20 Marks**.

SECTION – I

Q.1 Answer the following: **(12)**

a) Class b) Object
c) Inheritance d) Polymorphism.

Q.2 Define Software Development Life Cycle (SDLC). Explain with diagram different SDLC models. **(12)**

Q.3 "Activity diagrams are Advanced Flowcharts". Justify this statement with proper example. **(12)**

Q.4 Answer the following: **(12)**

a) Describe the role of Class diagram in domain modeling.
b) Discuss the role of Use Case modeling in Software Design and Development.

Q.5 What is Interaction Diagram? Discuss the need of Interaction Diagram in UML. **(12)**

Q.6 Write Short Note on **ANY TWO** of the following: **(12)**

a) Aggregation
b) RAD Model
c) Requirement Engineering

SECTION – I

Q.7 Draw and Explain Class Diagram for Library Management System. **(20)**

Q.8 Draw and Explain Activity Diagram for Hospital Management System. **(20)**

Q.9 Draw and Explain Use Case Diagram for Matrimonial Website. **(20)**

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)

M.C.A. Sem-II :SUMMER : 2023

SUBJECT : CLOUD COMPUTING CONCEPTS

Day : Saturday

Date : 6/5/2023

Time : 02:00 PM-05:00 PM

S-26127-2023

Max. Marks : 100

N.B.:

1) Solve **ANY FOUR** 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 to be written in **SAME** answer books.

SECTION-I

Q.1 Describe public, private and hybrid cloud in brief. **(12)**

Q.2 What is Hardware virtualization? Explain benefits of Hardware virtualization. **(12)**

Q.3 Explain various technology and processes required for deploying web services. Explain web service deployment Architecture. **(12)**

Q.4 What is Service Oriented Architecture? Explain various advantage of SOA to serve business. **(12)**

Q.5 What is server virtualization? Explain working and benefits of server virtualization. **(12)**

Q.6 Write short note on **ANY THREE** of the following: **(12)**

a) Types of Hypervisors
b) Cloud disaster recovery
c) AWS cloud
d) Scalability in cloud

SECTION-II

Q.7 **a)** Explain how Google app engine used to deploy web Application. **(10)**
b) Explain components of cloud IT operating model. **(10)**

Q.8 A Bharat Farm House is privately owned farm that produces a wide selection of quality vegetables and fruits they have 50 farm land and 500 shops across the five countries. Their products are handpicked and harvested in farm land by farmers, then transported to their warehouses where it is packaged and made ready for distribution. The packaged products are distributed to their shops and to other super market in the wholesale. The manager of farmhouse has approached you, requesting advice on how cloud based solution can be used to manage their business. Considering farm house owner do not need to invest in their IT data centre, they can use cloud based infrastructure and application to manage their business. **(20)**

1. List and explain 5 most needed infrastructure that can help to manage their business
2. Under what type of services it does falls?
3. Give reason why you prefer the cloud service provider services.

Q.9 Compare top 3 cloud service providers on the basis of their services, uptime, reliability and features. **(20)**

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)

M.C.A. Sem-II :SUMMER : 2023

SUBJECT : DATA STRUCTURES USING PYTHON

Day : Tuesday

Date : 9/5/2023

Time : 02:00 PM-05:00 PM

S-26128-2023

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 What is Queue? Define Queue as ADT and implement the same. **(12)**

Q.2 Write Python function to sort data using selection sort. Trace working of the algorithm/function on data 14, 2, 21, 13, 15, 29, 35, 7. **(12)**

Q.3 What is exception? Explain the mechanism of exception handling in Python with example. **(12)**

Q.4 What is AVL tree? When to use it? Explain the process of addition of new node in AVL tree with example data. **(12)**

Q.5 State the various ways of creation of object of set type in Python and also discuss various operations to be carried on it. **(12)**

Q.6 Write short notes on any **TWO** of the following: **(12)**

a) Red-Black Trees

b) Applications of Queue

c) User Defined Function in Python

d) List comprehension

SECTION – II

Q.7 Define and implement STACK as ADT in Python and use it to solve any postfix expression. **(20)**

Q.8 Which sorting algorithm you choose to sort data from various files and store them into single file? Justify your answer and also write Python code for selected algorithm. **(20)**

Q.9 What is linked list? Discuss its importance over other sequential data types. Elucidate the application of linked list in Polynomial arithmetic. **(20)**

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)

M.C.A. Sem-II :SUMMER : 2023

SUBJECT : DATA WAREHOUSING & DATA MINING

Day : Friday | Time : 02:00 PM-05:00 PM

Date : 12/5/2023 | **S-26129-2023** | 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

Q.1 What is Data Warehouse? Explain the characteristics of Data Warehouse. **[12]**

Q.2 Explain the applications of Data Mining in the marketing sector. **[12]**

Q.3 What is Data Mart? Discuss Top-down and Bottom-up approaches for building Data Mart. **[12]**

Q.4 Explain the need, objectives and techniques of data pre-processing. **[12]**

Q.5 Differentiate between OLTP vs. OLAP. **[12]**

Q.6 Write short notes on **ANY TWO** of the following: **[12]**

a) FP Growth Algorithm

b) Bayes' Theorem

c) Density Based Method

SECTION – II

Q.7 **a)** Explain K-means Algorithm. **[10]**

b) Explain Star schema with example for multidimensional database. **[10]**

Q.8 **a)** Discuss evolution of Database System technology. **[10]**

b) Explain importance of BI in detail. **[10]**

Q.9 **a)** How Regression Analysis is important for prediction? Explain with example. **[10]**

b) Compare Supervised and Unsupervised learning. **[10]**

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