

**MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)**

**M.C.A. Sem-II : : SUMMER - 2022**

**SUBJECT : OBJECT ORIENTED SOFTWARE ENGINEERING**

Day : Tuesday  
Date : 24-05-2022

**S-22729-2022**

Time : 02:00 PM-05:00 PM  
Max. Marks : 60

**N.B.**

- 1) **Q.No. 4** from Section-I is **COMPULSORY**.
- 2) Attempt **ANY TWO** questions from Q.No. 1 to Q. No. 3 in Section – I.
- 3) Attempt **ANY TWO** questions from Q.No. 5 to Q. No. 7 in Section – II.
- 4) Figures to the **RIGHT** indicate **FULL** marks.
- 5) Answers to both the sections should be written in **SAME** answer book.
- 6) Draw a labeled diagram **WHEREVER** necessary.

**SECTION – I**

- Q.1** Answer the following : (12)
- a) Describe the following terms :
    - i) Abstraction
    - ii) Association
    - iii) Composition
  - b) Explain the role of Inception phase in Rational Unified Process(RUP).
- Q.2** Answer the following : (12)
- a) Describe role of class diagram in domain modeling.
  - b) Examine the role of use-case modeling in software design and development.
- Q.3** Explain the following : (12)
- a) State the diagram used show interaction of objects in time-space and describe role of it in software modeling.
  - b) Describe the various symbols used in Activity diagram.
- Q.4** Write short notes on **ANY THREE** of the following : (12)
- a) Component diagram
  - b) Use case realization
  - c) RAD (Rapid Application Development)
  - d) Collaboration diagram
  - e) Aggregation

**SECTION – II**

- Q.5** Answer the following : (12)
- a) Illustrate role of Deployment diagram with example.
  - b) Identify the use cases in Online Recruitment Process and write use case description of any one.
- Q.6** Answer the following : (12)
- a) What do you know about State Transition diagram? Draw state transition diagram for Elevator (Lift).
  - b) Prove the role of Activity diagram in software modeling with example.
- Q.7** Explain the following : (12)
- a) Identify classes in Hospital Management System along with attributes and behaviour of each class.
  - b) Draw a class diagram to show relationships with classes identified in Hospital Management System.

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**MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)**

**M.C.A. Sem-II : : SUMMER - 2022**

**SUBJECT : CLOUD COMPUTING CONCEPTS**

Day : Thursday  
Date : 26-05-2022

**S-22730-2022**

Time : 02:00 PM-05:00 PM  
Max. Marks : 60

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**N.B.:**

- 1) **Q. No.4 is COMPULSORY.**
  - 2) Solve any two questions from Section-I and Section-II.
  - 3) Each question carries **12** marks.
  - 4) Figures to the right indicate **FULL** marks.
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**SECTION-I**

**Q.1** Answer the following questions: (6 x 2 = 12 marks)

- a) Define cloud and Grid computing.
- b) Differentiate between cloud and Grid computing.

**Q.2** Answer the following questions: (6 x 2 = 12 marks)

- a) What is virtualization? Explain server virtualization.
- b) Explain different types of server virtualization.

**Q.3** Answer the following questions: (6 x 2 = 12 marks)

- a) What is SOA? Draw block diagram of SOA.
- b) What are the characteristics of SOA?

**Q.4** Write short note on (**ANY THREE**): (4x 3 = 12 marks)

- a) Google cloud platform
- b) Saas
- c) Google App Engine
- d) VMM

**SECTION-II**

**Q.5** Explain Deployment models of cloud computing?  
(12 x 1 = 12 marks)

**Q.6** Explain development environment of different services of AWS.  
(12 x 1 = 12 marks)

**Q.7** What are the steps used by cloud computing platform for Developing application.  
(12 x 1 = 12 marks)

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**MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)**

**M.C.A. Sem-II : : SUMMER - 2022**

**SUBJECT : DATA STRUCTURES USING PYTHON**

Day : Saturday  
Date : 28-05-2022

**S-22731-2022**

Time : 02:00 PM-05:00 PM  
Max. Marks : 60

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**N.B.**

- 1) **Q.No. 4** from Section-I is **COMPULSORY**.
  - 2) Attempt **ANY TWO** questions from Q.No. 1 to Q. No. 3 in Section – I.
  - 3) Attempt **ANY TWO** questions from Q.No. 5 to Q. No. 7 in Section – II.
  - 4) Figures to the **RIGHT** indicate **FULL** marks.
  - 5) Answers to both the sections should be written in **SEPARATE** answer book.
  - 6) Draw a labeled diagram **WHEREVER** necessary.
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**SECTION – I**

- Q.1** Answer the following : (12)  
a) List and describe various data types in Python.  
b) List and describe working of logical operators in Python.
- Q.2** Answer the following : (12)  
a) What do you know about scope of variable? Describe various scopes with example.  
b) Explain Set data structure in Python.
- Q.3** Answer the following : (12)  
a) List the steps to read the contents of a file. Discuss usage of various read methods.  
b) What is exception? Explain its need with example.
- Q.4** Write short notes on **ANY THREE** of the following : (12)  
a) Iterative statements  
b) Recursion  
c) Finally clause  
d) Hash tables  
e) Skip lists

**SECTION – II**

- Q.5** Answer the following : (12)  
a) What is Abstract Data Type? Explain algorithm to implement Stack ADT.  
b) Define Queue. Explain algorithm to implement Queue ADT.
- Q.6** Answer the following : (12)  
a) What are binary trees? Create a binary search tree for following list of values:- 30,35,40,20,21,25,60,37.  
b) Write a short note on Red Black Trees and its application.
- Q.7** Explain the following : (12)  
a) Explain Quick sort algorithm with appropriate example and explain its complexity.  
b) Compare efficiency of linear search with binary search algorithm.

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**MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)**

**M.C.A. Sem-II : : SUMMER - 2022**

**SUBJECT : DATA WAREHOUSING & DATA MINING**

Day : Tuesday

Date : 31-05-2022

**S-22732-2022**

Time : 02:00 PM-05:00 PM

Max. Marks : 60

**N.B.:**

- 1) **Q.4** from Section – I is **COMPULSORY**.
- 2) Answer **ANY TWO** questions from Q.1, 2, 3 in Section – I.
- 3) Answer **ANY TWO** questions from Q.5, 6, 7 in Section – II.
- 4) Figures to the right indicate **FULL** marks.
- 5) Draw neat and labeled diagram **WHEREVER** necessary.
- 6) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION – I**

- Q.1** How is a data warehouse different from a database? How are they similar? [12]  
Explain with the help of data warehouse characteristics.
- Q.2** Explain with diagrammatic illustration data mining as a step in the process of knowledge discovery. [12]
- Q.3** How data mining systems are classified? Discuss each classification with an example. [12]
- Q.4** Write short notes on **ANY THREE** of the following: [12]
- a) Data Marts
  - b) Metadata of a Data Warehouse
  - c) Market Basket Analysis
  - d) Classification v/s Clustering
  - e) Dimensionality Reduction

**SECTION – II**

- Q.5** List and explain the desired features of cluster analysis. Explain K – Means clustering algorithm with suitable examples. [12]
- Q.6** What is classification? Explain an algorithm of Bayesian classification with an example. [12]
- Q.7** Explain applications of Data Warehousing and Data Mining in Higher Education. [12]

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