

MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-I :SUMMER : 2023
SUBJECT : APPLIED DATABASE MANAGEMENT SYSTEMS

Day : Wednesday

Time : 10:00 AM-01:00 PM

Date : 3/5/2023

S-25932-2023

Max. Marks : 100

N.B.

- 1) Attempt **ANY FIVE** questions from **SECTION-I**
- 2) Attempt **ANY TWO** questions from **SECTION-II**
- 3) Marks to the right indicate full marks.
- 4) Answers to both sections should be written in same answer book.

SECTION - I

- Q.1** a) What is NoSQL? Describe its architecture. (06)
b) Explain different data models with suitable example. (06)
- Q.2** a) What is Relational Algebra? Explain DIVIDE and RENAME operator with example. (06)
b) Explain the different functionalities of MongoDB. (06)
- Q.3** a) Explain Timestamp Ordering Protocol. (06)
b) Explain Distributed Database Architecture. (06)
- Q.4** a) Draw Entity Relationship Diagram for Library Management System. (06)
b) Explain checkpoint and usage. (06)
- Q.5** Examine the following document and normalize up to 3NF. (12)

Service Call Report

Customer Code: _____

Customer Name: _____

Date of Call : _____

Time: _____

Sr.No.	Machine Name	Problem	Spare part Used	Qty.	Rate
				Total	
				Service Charges	
				Grand Total	

Customer Remark: _____

Engineer Code: _____

Engineer Name: _____

Date: _____

Customer Signature.

(P.T.O)

- Q.6** Write short notes on any TWO of the following: (12)
- a) Transaction States
 - b) Strong and Weak Entity Set
 - c) Data Independence

SECTION - II

- Q.7** a) Explain different database languages. (10)
b) Explain deadlock and its handling techniques. (10)
- Q.8** a) Explain data encryption and decryption. (10)
b) Explain ACID properties. (10)
- Q.9** a) Explain the log-based recovery. (10)
b) Explain different strengths and weaknesses of NoSQL. (10)

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030523-m-iom-kolhapur

MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)

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

SUBJECT : COMPUTER NETWORKS

Day : Saturday

Time : 10:00 AM-01:00 PM

Date : 6/5/2023

S-25933-2023

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 the **SAME** answer book.
 - 3) Figures to the right indicate **FULL** marks.
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SECTION – I

- Q.1** What is Computer Network? Explain its goals and List various applications of Computer Network. [12]
- Q.2** Compare OSI reference model and TCP/IP reference model. [12]
- Q.3** Explain Throughput, Frequency, Wavelength, Bandwidth and Spectrum with reference to Signal Measurement. [12]
- Q.4** What is Switching? Explain Message Switching in detail. [12]
- Q.5** Explain in detail various Generations of Mobile Telephone System. [12]
- Q.6** Write short notes on **ANY TWO** of the following: [12]
- a) IP address
 - b) Multiplexing
 - c) Analog and Digital Signal

SECTION – II

- Q.7** What is MANET? Explain Destination Sequenced Distance Vector Protocol and List its Applications. [20]
- Q.8** Identify the classes IP address given below. Give the suitable justification for your answer: [20]
- | | |
|-----------------------|-----------------------|
| a) 227 . 12 . 14 . 87 | d) 252 . 5 . 15 . 111 |
| b) 193 . 14 . 56 . 22 | e) 134 . 11 . 78 . 56 |
| c) 14 . 23 . 720 . 8 | f) 224 . 220 . 24 . 6 |
- Q.9** What is Congestion? State the Principles of Congestion Control. Explain different congestion prevention policies. [20]

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-I :SUMMER : 2023
SUBJECT : JAVA PROGRAMMING

Day : Tuesday

Time : 10:00 AM-01:00 PM

Date : 9/5/2023

S-25934-2023

Max. Marks : 100

N.B:

- 1) Attempt any FIVE questions form Section-I. Each question carries 12 marks.
- 2) Attempt any TWO questions form section -II. Each questions carries 20 marks.

Section-I

- Q.1 What is method / function in Java? Explain the concept of pass by value and pass by reference. (12)
- Q.2 What is interface in Java? Explain the difference between interface and class. (12)
- Q.3 What is constructor in Java? Explain with example. (12)
- Q.4 What is type casting? Explain the types of type casting in Java. (12)
- Q.5 What is type package? Explain user defined packages. (12)
- Q.6 Write Short Notes on ANY TWO : (12)
- a) Access modifiers
 - b) Control structures
 - c) Method overriding

Section-II

- Q.7 Write a Java program to demonstrate single inheritance and hierarchical inheritance. (20)
- Q.8 Write a Java Program to copy content of one file into another file. (20)
- Q.9 Write a Java program to find Addition, Subtraction and Multiplication of two 3x3 multidimensional array. (20)

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Day : Friday

Time : 10:00 AM-01:00 PM

Date : 12/5/2023

S-25935-2023

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.
- 3) Use of non-programmable calculator is allowed.
- 4) Answer to both the sections should be written in **SAME** answer book.

SECTION - I

Q.1 Calculate Mean , Median and Mode for data given below:

x	5	10	15	20	25	30	35	40
f	6	20	24	28	15	4	2	1

Q.2 Explain : a) Types of Kurtosis b) Concept of Raw moments.

Q.3 Define Statistics. Explain scope of Statistics in detail.

Q.4 Calculate Standard Deviation and Variance for the data given below:

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	2	3	10	25	15	5

Q.5 Calculate Spearman's rank correlation coefficient for given ranks:

Rank in Statistics	1	2	3	4	5	6	7	8
Rank in Mathematics	2	4	1	5	3	8	7	6

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

- a) Concept of Prediction Model in R Programming.
- b) Types of Correlation.
- c) Quartile Deviation

SECTION - II

Q.7 For the data given :

X	10	12	13	12	16	15
Y	40	38	43	45	37	43

Calculate:

- a) Regression equation X on Y
- b) Regression equation Y on X
- c) Find Y, when X=20
- d) Find X, when Y=41

Q.8 a) Explain Karl Pearson's Coefficient of Correlation.
b) Compute Karl Pearson's Coefficient of Correlation from the following data:

X	15	18	20	28	34
Y	40	42	46	50	52

Q.9 Explain the following :

- a) Components of Time Series
- b) Bowley's Coefficient of Skewness

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
M.C.A. Sem-I :SUMMER : 2023
SUBJECT : MANAGEMENT CONCEPTS & APPLICATIONS

Day : Monday

Time : 10:00 AM-01:00 PM

Date : 15-05-2023

S-25936-2023

Max. Marks : ~~100~~

N.B.:

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

SECTION – I

- Q.1** Explain the meaning of management. Give various functions of management with a brief about each function. Do you see any difference between the role of a manager in IT and Non-IT organization? Justify your answer. [12]
- Q.2** Write a note on contributions of F.W. Taylor. [12]
- Q.3** Define “Planning”. Elaborate various types of plans with suitable example. [12]
- Q.4** Elaborate the concept of organizing. Discuss organization structure of any IT organization of your choice. [12]
- Q.5** Explain the process of staffing with reference to a multinational bank in your city. [12]
- Q.6** Write short notes on **ANY TWO** of the following: [12]
- a) Leadership styles
 - b) Decision support system
 - c) ERP advantages

SECTION – II

- Q.7** Assume you are the manager of Millenium Computer Services which serves individual as well as business customers. Which organization structure best suits the situation? Explain with the help of organization chart. [20]
- Q.8** You are planning to purchase a motor bike. You have to decide on a number of factors before the actual purchase. Explain the steps in the decision making process that you will follow for making the purchase. [20]
- Q.9** The CEO of Global Technologies wanted to implement management by objectives (MBO) in the organization. What advantages should be the CEO communicate to the employees to motivate them to implement MBO. [20]

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