

MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)

M.C.A. Sem-I : : SUMMER - 2022

SUBJECT : APPLIED DATABASE MANAGEMENT SYSTEMS

Day : Tuesday

Date : 24-05-2022

S-22721-2022

Time : 10:00 AM-01:00 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** Define Database. List the major characteristics of database approach. Also (12)
mention some disadvantages of it.
- Q.2** Describe the three level schema architecture of Database Management Systems. (12)
Explain how it helps to achieve data independence.
- Q.3** Answer the following : (12)
a) What is a deadlock? Explain the various approaches to handle the deadlock.
b) Distinguish deferred update and immediate update log based recovery techniques.
- Q.4** Write short notes on **ANY THREE** of the following : (12)
a) Roles and responsibilities of DBA
b) ACID properties of Transaction
c) Database security
d) Shadow paging
e) Relational algebra

SECTION – II

- Q.5** Draw Entry Relation Diagram for Library Management System and map it to (12)
relational database.
- Q.6** What is normalization? Why is it required during database design? Explain 1NF, (12)
2NF, 3NF with suitable example.
- Q.7** What are distributed databases? Explain how does it differ from centralized (12)
databases. Explain an architecture of distributed database.

MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)

M.C.A. Sem-I : : SUMMER - 2022

SUBJECT : COMPUTER NETWORKS

Day : Thursday
Date : 26-05-2022

S-22722-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.

- 1) Q.No. 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) All questions carry **EQUAL** marks.
 - 5) Answer to both the sections should be written in **SAME** answer book.
 - 6) draw a labeled diagram **WHEREVER** necessary.
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SECTION – I

- Q.1** Answer the following : (6 marks x 2 = 12 marks)
- a) Explain design issues of different layers in Network Architecture.
 - b) What is Computer Network? Explain in brief classification of Computer Network.
- Q.2** Answer the following : (6 marks x 2 = 12 marks)
- a) Compare OSI model with TCP/IP reference model.
 - b) Explain Guided Media and its type in detail.
- Q.3** Answer the following : (6 marks x 2 = 12 marks)
- a) Compare Static and Dynamic Routing algorithm.
 - b) Explain the principle of Congestion Control and also explain Prevention Policies.
- Q.4** Write short notes on **ANY THREE** of the following : (4 marks x 3 = 12 marks)
- a) RPC
 - b) Mobile-IP
 - c) Data Encryption
 - d) IPv6
 - e) Bluetooth
 - f) Distance Vector Routing Algorithm

SECTION – II

- Q.5** Answer the following : (6 marks x 2 = 12 marks)
- a) Suggest Network layout and design for XYZ company whose business is spread across the world.
 - b) Compare Mobile Ad hoc Networks with Wireless Sensor Networks.
- Q.6** Answer the following : (6 marks x 2 = 12 marks)
- a) Explain different Generations of Mobile Telephone System.
 - b) A company with IP address 236.15.15.15 expands its Class C network with Subnet Mask 255.255.255.240. Find the different Subnet IDs for given Subnet Mask.
- Q.7** Answer the following : (6 marks x 2 = 12 marks)
- a) Explain Domain Name Service in detail.
 - b) What is Switching? Compare Circuit Switching with Packet Switching.

MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)

M.C.A. Sem-I : : SUMMER - 2022

SUBJECT : JAVA PROGRAMMING

Day : Saturday
Date : 28-05-2022

S-22723-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) Attempt any **THREE** 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 **SAME** answer book.
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SECTION-I

- Q.1** How Java is platform independent? Explain. (10)
- Q.2** What is user defined package? Explain with example. (10)
- Q.3** What is polymorphism? Explain method overloading and method overriding. (10)
- Q.4** What is buffered stream? Explain DataInput and DataOutput stream. (10)
- Q.5** Write short notes on any **TWO** of the following: (10)
- a) LinkedHashset
 - b) Thread synchronization
 - c) Garbage collection

SECTION-II

- Q.6** Write a Java Program to find smallest element of tree. (15)
- Q.7** Write a Java program to divide a string in 'N' equal parts. (15)
- Q.8** Write a Java program to demonstrate user defined exception handling. (15)

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)

M.C.A. Sem-I : : SUMMER - 2022

SUBJECT : COMPUTATIONAL STATISTICS

Day : Tuesday
Date : 31-05-2022

S-22724-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) Attempt **ANY THREE** questions from Section-I and **ANY TWO** questions from Section-II.
- 2) Figures to right indicate **FULL** marks.
- 3) Answer to both sections should be written in **SAME** answer book.
- 4) Use of non-programmable **CALCULATE** is allowed.

SECTION-I

Q.1 Define statistics? Explain scope of statistics. (10)

Q.2 Calculate Standard Deviation for the data given below: (10)

Demand (in units)	5	10	15	20	25	30
Frequency	8	15	23	32	16	6

Q.3 Calculate mean, median and mode for following data: (10)

X	20	30	40	50	60	70
Y	8	12	20	10	6	4

Q.4 Explain the following: (10)

- a) Measures of skewness based on moments.
- b) Measure of kurtosis based on moments.

Q.5 Write short note on (**ANY TWO**): (10)

- a) Quartile Deviation
- b) Cumulative frequency distribution
- c) Geometric Mean

SECTION-II

Q.6 Calculate Karl Pearson's coefficient of correlation for the following data: (15)

X	22	35	13	19	33	58	31	22	29
Y	27	34	32	24	33	48	29	25	29

Q.7 Find two regression equations for the following series. What is the most likely value of X when Y=23. (15)

X	36	23	27	28	26	29	30	31	33	35
Y	29	18	20	22	27	21	29	27	29	28

Q.8 Explain the following:

- a) Components of time series (08)
- b) R programming (07)

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)

M.C.A. Sem-I : : SUMMER - 2022

SUBJECT : MANAGEMENT CONCEPTS & APPLICATIONS

Day : Thursday

Date : 2/6/2022

S-22725-2022

Time : 10:00 AM-01:00 PM

Max. Marks : 60

N.B.

- 1) Attempt **ANY THREE** questions from Section – I and **ANY TWO** questions from Section – II.
 - 2) Figures to the **RIGHT** indicate **FULL** marks.
 - 3) Answer to both the sections should be written in **SAME** answerbook.
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SECTION – I

- Q.1** Explain in detail the Human relations approach in Management. (12)
- Q.2** i) Discuss the concept of Management by Objectives (MBO) . (06)
ii) Enumerate on the benefits and drawbacks of MBO. (06)
- Q.3** i) State the importance of organizing. (06)
ii) Explain any one organizational design of your choice. (06)
- Q.4** Write a detailed note on any two training and development methods suitable for IT organizations. (12)
- Q.5** Write short notes on **ANY TWO** of the following : (12)
i) Security measures under E-commerce
ii) SAP
iii) Management by Exception

SECTION - II

- Q.6** Explain
i) Decision making process (06)
ii) Need of computer based decision making. (06)
- Q.7** Discuss the various Leadership styles. In your opinion, which leadership style should be adopted by a software team leader to accomplish the objectives of the organization? (12)
- Q.8** How does feedback in control system helps in measuring the progress of any given project? Give suitable examples and make necessary assumptions if necessary. (12)
