

Office

KW 111

8/5/24 (M)

Exam Code: 105704
(20)

Paper Code: 4262

Programme: Bachelor of Science (Information Technology)
Semester-IV

Course Title: Database Management System

Course Code: BITL-4111

Time Allowed: 3 Hours

Max Marks: 60

Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question contains equal marks.

Section A

1. What do you mean by Database Management System? Explain three-level architecture of database system and Why we need mapping between the levels? (12)
2. (a) Explain Relational Model. How Relational Model is different from Hierarchical Model and Network Model. (08)
(b) Explain the different keys used in a relational system. (04)

Section B

3. Discuss in detail the Entity Relationship model with the help of suitable example. (12)
4. Write the short note on:
 - a) Codd's Rules
 - b) Relational Algebra (6X2)

Section C

5. What is Normalization? Explain 3NF with example. How are the anomalies of the 2NF removed in 3NF? (12)
6. Explain in brief
 - (a) ACID properties
 - (b) Recovery of database (6X2)

Section D

7. (a) What are Joins? Explain various types of joins with the suitable example.
 - (b) Explain different Built-in Functions. (6X2)
8. Discuss
 - (a) Views and Sequence
 - (b) NoSQL (6X2)

Exam Code: 105704

Paper Code: 4263

**Programme: Bachelor of Science
(Information Technology) Semester: IV**

Course Title: Data Structures

Course Code: BITL-4112

Time Allowed: 3 Hours

Max Marks: 60

Note: Attempt five questions in all, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries equal 12 marks.

Section A

- Q1: Define the term Data Structure. Explain its various types. (12)
Q2: Using Linear search and Binary search methods, find the location of an element 55. Also write complexities of these two algorithms. 99, 11, 33, 88, 22, 55, 77 (12)

Section B

- Q3: Explain types of hash function with examples. (12)
Q4: a) Compare one way linked list with two way linked list. (6)
b) Write advantages of linked list over array. (6)

Section C

- Q5: Write Quicksort algorithm and apply it to sort the following elements in ascending order.
100, 90, 80, 70, 60, 50, 40, 30, 20, 10 (12)
Q6: a) Write differences between Stack and Queue. (4)
b) What are various ways to represent priority queue in memory? (8)

Section D

- Q7: Explain Inorder traversal of binary tree with the help of example. (12)
Q8: Write a note on the following (3*4 = 12)
a) DFS Vs BFS
b) Adjacency list
c) Graph Vs Tree

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Paper Code: 4264

Programme: Bachelor of Science (Information Technology)
Semester-IV

Course Title: Object Oriented Programming-II

Course Code: BITL-4113

Time Allowed: 3 Hours

Max Marks: 60

Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question of equal marks (12 Mark).

Section A

1. (a) Java is secure, platform-dependent and robust. Explain the features of java that make it support this statement. (6)
- (b) What are Class and Objects? How to create class and object with example? (6)
2. How to declare string? How to compare and Concatenate the strings and also explain string tokenizer. (12)

Section B

3. What are Packages? What are the advantages of using packages and also Explain the process of importing packages in a class. (12)
4. (a) What is Inheritance? Explain different types of Inheritance. (6)
(b) What is Polymorphism? Explain Runtime polymorphism with example. (6)

Section C

5. How Exception Handling is done in Java? Explain Exception Handling with try-catch block. (12)
6. What is thread? How to creating a thread, sleeping a thread and thread priority done in Java? (12)

Section D

7. Explain Buffered input & output stream and JDBC in detail. (12)
8. Explain JDBC drivers, steps to connect to the database, connectivity with MYSQL. (12)

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Paper Code: 4265

Programme: Bachelor of Science (Information Technology)
Semester-IV

Course Title: E-Business

Course Code: BITL-4114

Time Allowed: 3 Hours

Max Marks: 60

Note-Attempt five questions in all, selecting one question from each section. Fifth can be attempted from any section. Each question carries equal (12) marks.

SECTION- A

1. What do you mean by E-commerce? What are its types? What is its importance for customer and business?
2. (a) Explain the importance and benefits of E-commerce?
(b) Explain e-commerce business model with example?

SECTION- B

3. Compare the EDI With traditional system? Discuss the implementation issues of EDI?
4. What is VANs and internet as promoters of E-commerce?

SECTION- C

5. What are the security issues in online transactions?
What are the steps/ precautions For secure online transaction?
6. What is electronic cash? How it is different from paper cash? What are the risk and legal issues in electronic cash?

SECTION- D

7. What is BPR? Discuss the methodology and planning methods for change to EC/EDI?
8. Discuss the case studies of E-commerce in E-Governance?

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(20)

Bachelor of Computer Applications Semester-IV
Exam Code: 107204

Bachelor of Science (Information Technology) Semester-IV
Exam Code: 105704

Course Title: Foundation of Statistical Computing

Course Code: BCAM-4117 / BITM-4118

Time Allowed: 3 Hours

Max Marks: 40

Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 8 marks.

Section —I

1. Explain applications and features of \mathbb{R} . 8
2. What is a Vector in \mathbb{R} ? Explain common vector operations. 8

Section — II

3. What is a list? Explain the concept of lists in R with examples. 8
4. Explain R operators in detail with programming examples. 8

Section — III

5. Write a program in R to check Armstrong number. 8
6. Explain various looping and control statements in R. 8

Section — IV

7. Explain Graphs with examples to draw various graphs. 8
8. Explain Naive Bayes Model. 8

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