Hall Ticket Number :										

R-17

Code: 7P2B31

M.C.A. III Semester Supplementary Examinations October 2020

Database Management Systems

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. a) What are domain constraints? 4M

   b) Explain different types of database users and write the functions of DBA. 8M

OR

2. a) Distinguish strong entity set with weak entity set? Draw an ER diagram to illustrate Weak entity set? 8M

   b) Define

      i) super key ii) candidate key iii) primary key 4M

UNIT–II

3. a) Define null value? Describe the effect of null values in database? 7M

   b) Explain how to create new domain. 5M

OR

4. a) Discuss about Complex integrity constraints in SQL? 7M

   b) Explain Aggregate Functions. 5M

UNIT–III

5. a) Define Join Dependency with Example? 6M

   b) Explain in detail storage structure. 6M

OR

6. a) Define normalization? Explain 1NF, 2NF, 3NF normal forms. 6M

   b) Compare and contrast BCNF with 3NF? 6M

UNIT–IV

7. a) Discuss the Procedure to test Serializability? 6M

   b) List the advantages of concurrent execution. 6M

OR

8. a) Explain the procedure to test for serializability. 5M

   b) Discuss How do you implement Atomicity and Durability? 7M

UNIT–V

9. a) Differentiate between linear and extensible hashing? 6M

   b) Explain about B+ tree index file. 6M

OR

10. a) What is indexing and what are the different kinds of indexing? 7M

    b) Define Indexed Sequential Access Method? 5M

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Hall Ticket Number :										

R-17

Code: 7P2B34

M.C.A. III Semester Supplementary Examinations October 2020

Web Component Development with J2EE

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. a) Identify appropriate JDBC Driver from its types and justify its effective usage in JDBC processing. 6M

   b) Elaborate Tire, Multi-Tire and J2EE Multi-tier architecture. 6M

OR

2. a) Evaluate the ResultSet, Transaction processing and Exceptions for JDBC / ODBC database. 6M

   b) Generate table to operate with create, insert, select and indexing the features of it. 6M

UNIT–II

3. a) Estimate the advantages of servlets over CGI in detail. 6M

   b) Illustrate the usage of handling HTTP GET and HTTP POST Request 6M

OR

4. a) Elaborate the Servlets Life Cycle in detail. 6M

   b) Compare Grouping and Ordering Data in table with appropriate example. 6M

UNIT–III

5. a) Examine the Multi-tier Applications with a Database Connectivity to develop billing desk software. 6M

   b) Elaborate about Servlets Request Dispatcher and Servlets Send Redirector 6M

OR

6. a) Compare the importance of Servlets Session Tracking with Filter API. 6M

   b) Illustrate the merits of Single Thread Model Using Database Connectivity with an example. 6M

UNIT–IV

7. a) Prioritize the applicability and advantages of JSP. 6M

   b) Propose a centralized system for maintain blood donors details use JSP Scripting Elements where ever required. 6M

OR

8. a) Justify the need for JSP Scripting Elements Expressions and Implicit Variables. 6M

   b) Construct a personal page to maintain the biography of a VIP. Develop using JSP. 6M

UNIT–V

9. a) Classify the Java Beans API Introspector and property descriptor usage in detail. 6M

   b) Compare about Java Beans API Event Descriptor and Method Descriptor. 6M

OR

10. a) Propose a design for scheduling a culture event process using JSP collaborating with Java Beans. 6M

    b) Illustrate the advantages and disadvantages of Java Beans. 6M

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Hall Ticket Number :										

R-17

Code: 7P2B36

M.C.A. III Semester Supplementary Examinations October 2020

Operating Systems

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. Discuss the important key properties of the following
   (i) Distributed systems 6M
   (ii) Time-shared systems 6M

OR

2. Compare and contrast multiprogramming and multitasking concepts. How does each category help to improve the performance? 12M

UNIT–II

3. Describe the difference between short-term and long-term scheduling with suitable example. 12M

OR

4. Calculate the average turnaround time for the following processes.
   (i) SJF non-preemptive 4M
   (ii) FCFS 4M
   (iii) Preemptive SJF 4M

UNIT–III

5. List the four necessary conditions to achieve deadlock. Also, explain resource allocation graph for deadlock avoidance. 12M

OR

6. Explain about deadlock prevention schemes in detail 12M

UNIT–IV

7. State and briefly explain SSTF, SCAN and FCFS disk scheduling algorithms with suitable example 12M

OR

8. Compare segmentation with paging in terms of total amount of memory requirement by the address translation structures in order to determine physical address from virtual address. 12M

UNIT–V

9. Explain the technical details of a firewall and discuss any three types of firewalls with neat diagrams. 12M

OR

10. What is the difference between threat and attacks? Compare and contrast system-level threats and network-level threats. Also, suggest countermeasures for each category. 12M

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Hall Ticket Number :										

Code: 7P2B32

R-17

M.C.A. III Semester Supplementary Examinations October 2020

PHP With MySql

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. a) Differentiate between static and dynamic web pages with an suitable example for each 6M
   b) Discuss the procedure for running web page using XAMPP environment 6M

OR

2. a) Differentiate between Client-Side and Server-Side Scripting with an suitable example for each 8M
   b) List any 8 tools for PHP development 4M

UNIT–II

3. a) Explain PHP basics and commenting the code 6M
   b) Explain various data types available in PHP. 6M

OR

4. a) Discuss control structures in PHP with a sample program 6M
   b) Discuss decision making in PHP with a sample program 6M

UNIT–III

5. a) Write a brief note Relational databases vs spreadsheets 6M
   b) Describe the installation steps on My-SQL on windows environment. 6M

OR

6. a) Discuss the importance of CRUD operations 6M
   b) Why should we use Joins? Explain in detail 6M

UNIT–IV

7. a) What is privilege? What are the basic privileges assigned to the users in My-Sql? 6M
   b) Write a note on php.ini 6M

OR

8. Explain in detail how to handle and log PHP errors. 12M

UNIT–V

9. a) Write a neat procedure on Connecting to MYSQL using PHP 6M
   b) Write a PHP script to connect MySQL server from your website. 6M

OR

10. a) Create a form for your company employee entering details for each employee in the company. Validate the form using PHP validates and display error messages 4M
    b) Discuss the security considerations to be kept in ind while developing a website 8M

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Hall Ticket Number :										

R-17

Code: 7P2B35

M.C.A. III Semester Supplementary Examinations October 2020

Design and Analysis of Algorithms

Max. Marks: 60 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

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UNIT–I

1. a) Define algorithm. Discuss about different Pseudo code notations for expressing algorithm. 6M

   b) What are the characteristics of an algorithm? Discuss. 6M

OR

2. a) Explain the fundamentals of algorithmic Problem Solving? 6M

   b) Write an algorithm for linear search algorithm and analyze it's time complexity 6M

UNIT–II

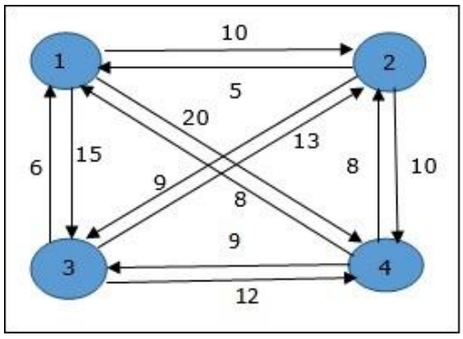
3. Explain Quick Sort algorithm with a suitable example. Find the time complexity of Quick Sort algorithm in average case. 12M

OR

4. Write an algorithm for binary search using divide and conquer method. Discuss the time complexity of this algorithm. 12M

UNIT–III

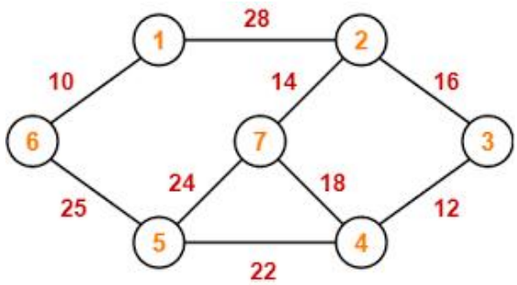
5. Find the optimal tour for the given directed graph using travelling sales person problem



12M

OR

6. Write Kruskal's algorithm for finding minimum spanning tree. Find the minimum cost spanning tree for the graph given below



12M

UNIT–IV

7. a) Write an algorithm for finding graph coloring problem using backtracking. 8M

   b) Draw the state space tree for m-coloring when n=3 and m=3. 4M

OR

8. Consider the knapsack problem as M = 15, n = 4, (P1, P2, P3, P4) = (10, 10, 12, 18) and (w1, w2, w3, w4) = (2, 4, 6, 9). Find the solution for this knapsack problem using FIFO branch and bound technique. 12M

UNIT–V

9. Write short notes on
   a) spanning trees
   b) bi-connected components 12M

OR

10. State and prove COOK's theorem. 12M

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