

Hall Ticket Number :

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R-17

Code: 7P2B35

M.C.A. III Semester Regular Examinations Nov/Dec 2018

Design & 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)

UNIT-I

1. Define and discuss different asymptotic notations used to measure the time complexities of an algorithm. 12M

OR

2. a) Explain Master method of solving a recurrence relation 6M
b) Explain linear search algorithm and discuss its time complexities 6M

UNIT-II

3. Discuss Divide and Conquer approach. Explain this approach with Quick sort. 12M

OR

4. Explain how Divide and Conquer approach is followed in Binary search and Binary tree traversals 12M

UNIT-III

5. Explain general method of Dynamic programming. Explain how dynamic programming is applied in optimal binary search trees to find smallest possible search time for given sequence of accesses. 12M

OR

6. Explain general principle of Greedy technique. Explain Dijkstra's algorithm to find shortest paths from a given source to all vertices of a graph. 12M

UNIT-IV

7. Explain the general approach of Back Tracking. How a Hamiltonian cycle can be identified using this approach. 12M

OR

8. Explain the general approach of Branch and Bound. Explain how 0/1 knapsack problems can be solved using this approach. 12M

UNIT-V

9. a) Explain how connected components of a graph can be identified. 6M
b) Explain how Spanning trees of a graph can be identified. 6M

OR

10. Travelling sales person problem is NP – Complete. Discuss. 12M

Hall Ticket Number :

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R-17

Code: 7P2B31

M.C.A. III Semester Regular Examinations Nov/Dec 2018

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)

UNIT-I

- 1 Explain about
- a) Data Abstraction 4M
 - b) Instances and Schemas 4M
 - c) View of Data 4M

OR

2. a) List the Properties of ER Model? 6M
b) Write about DDL and DML? 6M

UNIT-II

3. Discuss the Differences between Union, Rename and Cartesian Product? 12M

OR

4. Explain Join Operations with suitable Example? 12M

UNIT-III

5. a) Write the Problems Related to Decomposition? 6M
b) What is Functional Dependency? 6M

OR

6. Describe the difference between the BCNF and 3NF? 12M

UNIT-IV

7. a) How the ACID Properties are useful to the Databases? 6M
b) Explain about Serializability? 6M

OR

8. Explain ARIES in Detail? 12M

UNIT-V

9. What are the Different Levels of RAID? 12M

OR

10. Compare Heap File Organization with Hash File Organization? 12M

Code: 7P2B33

M.C.A. III Semester Regular Examinations Nov/Dec 2018

Management Information Systems

Max. Marks: 60

Time: 3 Hours

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

UNIT-I

1. a) Define MIS. Explain how the management, information and system are related to computers. 6M
b) How the MIS helpful for the increased complexity of Business. Explain. 6M

OR

2. a) Explain about the classical process theory model of organizational theory. 6M
b) Explain about expectancy model of motivation. 6M

UNIT-II

3. a) Why are information systems so essential for running and managing a business today? 6M
b) What is an information system? Explain different dimensions of information systems. 6M

OR

4. a) How does Porter's competitive forces model help companies develop competitive strategies using information systems? 6M
b) What are the challenges posed by strategic information systems and how should they be addressed? 6M

UNIT-III

5. Explain how management science techniques are useful for making decision rules. 12M

OR

6. Write short notes on conceptual system design phases
i. Define the problems
ii. Develop alternative conceptual designs and select one 12M

UNIT-IV

7. a) What are the factors should be considered in forms design? Discuss. 6M
b) How the designer obtaining information for the design of the MIS. Explain. 6M

OR

8. a) Discuss about the systematic approach to the development of the database. 6M
b) How to document the detailed design. Explain. 6M

UNIT-V

9. a) How to plan the MIS implementation in the organization. Explain. 6M
b) Explain the steps for preparation of MIS software. 6M

OR

10. a) What are the procedures to be develop for implementation of MIS? Explain. 6M
b) Briefly explain about environmental change and the internal problems related to MIS maintenance. 6M

Code: 7P2B36

M.C.A. III Semester Regular Examinations Nov/Dec 2018

Operating Systems

Max. Marks: 60

Time: 3 Hours

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

UNIT-I

1. a) Define the essential properties of the batch and time sharing operating systems. 6M
b) What is System call? What are the different types of system calls? 6M

OR

2. a) How a Computer network and Distributed system are related? 6M
b) Mention the objectives and functions of real time systems. 6M

UNIT-II

3. a) What are the different states of a process? Draw the state transition diagram of a process. 4M
b) Consider the following table of arrival time and burst time for three processes P0, P1 and P2.

Process	Arrival time	Burst Time
P0	0 ms	9 ms
P1	1 ms	4 ms
P2	2 ms	9 ms

Scheduling is carried out only at arrival or completion of processes. What is the average waiting time and turnaround time for these processes using

- (i) FCFS scheduling algorithm
(ii) SJF Preemptive scheduling algorithm 8M

OR

4. a) What is semaphore? What is its importance in providing process synchronization? 6M
b) Write and explain the solution for bounded buffer Producer-Consumer problem using monitors. 6M

UNIT-III

5. a) What are the reasons for deadlock to occur? What are the advantages and disadvantages of deadlock prevention/avoidance mechanisms? 6M
b) What are the limitations of recovering from deadlock? 6M

OR

6. Write Banker's algorithm for Deadlock avoidance. Illustrate with an example. 12M

UNIT-IV

7. a) What is paging? Explain the hardware support given for paging. 6M
b) Explain in detail about operations that are to be performed on a directory and also describe the most common schemes for defining the logical structure of a directory. 6M

OR

8. a) Consider the following page reference string 2, 3, 4, 5, 3, 2, 6, 7, 3, 2, 3, 4, 1, 7, 1, 4, 3, 2, 3, 4, 7. Calculate the number of page faults with LRU, FIFO and optimal page replacement algorithms with frame size of 3 6M
b) Explain file allocation methods. 6M

UNIT-V

9. a) What is access matrix? Explain how the access matrix can be effectively implemented? 6M
b) Explain how worms and viruses can affect the operation of the computer? 6M

OR

10. a) Explain different protection mechanisms in operating systems. 6M
b) Illustrate different methods for user authentication. 6M

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R-17

Code: 7P2B32

M.C.A. III Semester Regular Examinations Nov/Dec 2018

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)

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) Discuss operators in PHP with sample programs 8M
- b) Write a program in PHP to display "Have a nice weekend!" if the current day is Friday, Otherwise, it will output "Have a nice day!" 4M

OR

4. a) Discuss in detail about the procedure of creating and calling a function with syntax in PHP 7M
- b) Explain type casting in PHP with a sample program 5M

UNIT-III

5. a) Distinguish between relational data bases and spread sheets with an example 4M
- b) Outline the relational database design process with an example 8M

OR

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

UNIT-IV

7. Discuss about my.ini and httpd.conf 12M

OR

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

UNIT-V

9. a) Discuss the procedure for connection to MYSQL using PHP 8M
- b) Explain defensive programming 4M

OR

10. a) Write the procedure for creating Content mangement System using PHP 4M
- b) Create your own content management system using an OOP approach 8M

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R-17

Code: 7P2B34

M.C.A. III Semester Regular Examinations Nov/Dec 2018

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)

UNIT-I

1. a) What is JDBC? Write a short note on JDBC packages. 6M
- b) List and explain various types of JDBC drivers. 6M

OR

2. a) Discuss how the data will be selected from the table with an example. 6M
- b) Write short note on ResultSet and Metadata. 6M

UNIT-II

3. a) Explain the steps for deleting data from a table with an example. 6M
- b) Discuss how to grouping and ordering of data in a table with an example. 6M

OR

4. a) What is Servlet? Write about the advantages of Servlets over CGI. 6M
- b) Explain how to handle HTTP GET and HTTP POST request in Servlets. 6M

UNIT-III

5. a) Discuss the concept of Servlet Config. 6M
- b) Write short notes on Servlet Context. 6M

OR

6. a) Explain Session Tracking with suitable example. 6M
- b) What is Cookie? Explain Cookie with an example 6M

UNIT-IV

7. a) Discuss the procedure for developing JSP application. 6M
- b) Explain the JSP scripting elements. 6M

OR

8. a) What is JSTL? Write short note on it. 6M
- b) Discuss JSP page directives with example. 6M

UNIT-V

9. a) What is java Bean? Write the advantages of Java Beans. 6M
- b) Write short notes on Property Descriptor with an example. 6M

OR

10. a) Explain Introspector with an example. 6M
- b) Describe the Method Descriptor with an example. 6M
