

SEMESTER -1

RELATIONAL DATABASE MANAGEMENT SYSTEM

1. Define Data Abstraction and it's levels.
2. Define Data Independence and what are its type.
3. Explain Overall structure of DBMS.
4. Explain types of Database User.
5. List the functions of Database Administrator.
6. Explain in brief Client Server Architecture with the example.
7. Write the 12 rules (Codd's Law) for fully functional RDBMS.
8. Define Data Warehousing & Data Mining.
9. What is RDBMS & difference between RDBMS & DBMS?
10. Advantages of RDBMS over File Processing System
11. Explain DDL & DML .
12. What is meant by Data Model ? Describe Network Model .
13. What is Relational Model ? Explain Attributes & Domain.
14. Explain the term Primary Key & Candidate Key with example.
15. Explain Foreign Key Constraints with examples.
16. Explain the term Database Schema & Instance.
17. Compare E-R Model with Hierarchical Model.
18. List various symbols used to sketch various diagrams with their meanings and examples.
19. Explain the term Specialization and Generalization.
20. What are the different Data Type of SQL? Explain with example.
21. Draw E-R Diagram of college system. The college keeps the data of Students , Employees ,Books.
22. Explain any Two DDL & DML Commands with their Syntax and example.
23. Consider the following structure for EMPLOYEE.
EMP(EMPNO, ENAME, JOB, MGR, JOINDATE, SALARY, COMM, DEPTNO)

Write the SQL Queries for the following.

- a) Display the list of Employees excluding JOB title as "Salesman".
- b) Change the Average Salary for each Department.
- c) Change the name of Employee "RAHUL GOSAVI" to "JIGAR DEV".
- d) Display Employee Names whose name starts with letter "A".

PART-B

1. Explain types of Joins
2. Consider following relational schema STUDENT
(RNO,Name,DOB,Percentage,DNO)
DEPARTMENT(DNO,DNAME,HEAD)
 - a. Write relational algebra expressions:
 - b. Find students name & course from computer department
 - c. Get students name who has percentage greater than 70.
3. Explain multilevel dependencies with example
4. Explain referential integrity constraint and on delete cascade with suitable example
5. what is functional dependency? Give suitable example.
6. What is select and project operator in relational algebra? Give one example.

7. Explain any four aggregate functions with example
8. Draw and explain state diagram of transaction
9. What is transaction? Explain ACID properties of transaction
10. Describe grant and revoke commands with example.
11. Describe DCL command with example.
12. Explain string function with example.
13. Explain set operator with example.
14. Explain concurrent execution of transaction.
15. ? Why it is used? Create sequence for "STUDENT " table.
16. What is index? List its types.
17. What are snapshots? Give its uses?How to create snapshots?
18. What are synonyms? How to create synonyms?
19. Consider following schema
 - a. ACCOUNT_HOLDER(account_ no, name, account_ type, PAN_Number, balance)
 - b. Give view on ACCOUNT_HOLDER having attributes(account_ no, name, PAN_ Number) when balance is greater than 50000.

20. Explain while loop in PL/SQL with example
21. Write PL/SQL program to display factorial of any number.
22. Explain block structure of PL/SQL.
23. Explain predefined exceptions and user defined exceptions
24. Explain function in PL/SQL with suitable example
25. Explain procedure in PL/SQL with suitable example
26. What are triggers? How to create triggers?
- 27.** What is cursor? Explain its types?

ENTERPRISE JAVA PROGRAMMING

1. Explain enterprise java application and it's architecture? 2. Write a short note on enterprise edition?
2. Explain java application technology or java enterprise evolution? 4. What is glassfish server and its uses? Explain.
3. What is java EE server?
4. Explain java EE container and it's services?
5. Explain lifecycle of a servlet?
6. Compare CGI and servlet.
7. Explain the advantages of using servlet?
8. Explain get() and post() method in servlet?
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24. write a short note on session tracking method ? write a program to implement for creating a session? 13. How to create a process of uploading file application?
25. Write creating process of downloading file application?
26. Write a short note on non- blocking i/o?
27. What are the different methods available in servlet for i/o string for non-blocking i/o?

28. Explain different methods of retrieving the file?
 - a. Explain the advantages and disadvantages of JSP?
 - b. Explain difference between servlet and JSP?
 - c. Write in detail lifecycle of JSP Page? 4. Explain in detail architecture of JSP?
29. Write a short note on JSP technology?
30. Write down execution process of JSP?
31. Explain JSP scriptlet using example?
32. Explain different elements in JSP?
33. Explain different types of directives in JSP?
34. Explain rules of writing JSP document?
35. Write a program in JSP to demonstrate login form?
36. Explain in detail action elements?
37. Write a short note on implicit object in JSP? 14. Explain different methods of session object?
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48. Write the lifecycle of message driven bean?
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50. What is a directory service?
51. Write a note on JNDI namespace in java EE?
52. Write a note on interceptors?
 - a. Develop simple visitor statistics application by applying interceptors?

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57. What are the Variors option that allow the java developers to store and retrieve persistent data?
58. List and Explain various advantages provided by Object Relational Mapping.
59. Write a note on Java Persistence API.
60. Explain the architecture of JPA 2.0.
61. Where does ORM/JPA fit?
62. Explain persistence.xml file with an example.
63. Develop a Guestbook Application Using JPA.
64. Write short notes on Hibernate.
65. Explain the architecture of Hibernate.
66. what are different components of Hibernate, Explain ?
67. Explain the working Hibernate.
68. Explain software development approach of Hibernate ?
69. Develop a Hibernate to store and retrieve employee details in MYSQL Database.
70. Develop a Hibernate application to store Feedback of Website visitor in MySQL Database.
71. Develop an application to demonstrate Hibernate One-to-One Mapping using Annotation

PROGRAMMING USING C#.NET

1. What is inheritance and explain the use of new keyword in C# inheritance.
2. Define Polymorphism.
3. Define a constructor and list its different types.
4. What are the uses of indexers
5. Define Delegates.
6. What are the uses of namespaces?
7. Discuss about exceptions and Name any four system defined exceptions.
8. Differentiate errors from exceptions.
9. List the difference between abstract classes and interfaces?
10. Give an example for virtual method and polymorphism.
11. What is the relationship between specialization and generalization?
12. Discuss about multicast delegate?
13. Illustrate with an example the call to a base class constructor from a derived class?
14. Arrange atleast three important features of properties.
15. Point out the methods through which reusability is achieved in C#.
16. Differentiate Multitasking and Multithreading
17. Justify that Operators need to be overloaded. List the operators that can be overloaded?
18. What support is provided by c# for events?
19. What if there are no sealed classes in c#
20. Develop a c# application with method hiding
21. i) What do you mean by delegates? State their use with an example.
ii) Explain the process of handing events through delegates.

22. i) Define an abstract class and explain the role of abstract classes in an application development
- ii). Explain with an example multitasking and multithreading in c#.
23. i) What are abstract classes and how to implement their interfaces?
- ii) Brief note on Defining operator pairs and implementing an operator.
24. i) Describe how C# support multiple inheritance? Explain by giving an example.
- ii) Describe the use of properties with an example.
25. i) Discuss briefly about interfaces with example.
- ii) Write a program to find area of various shapes like rectangle, circle and triangle using the concept of interfaces.
26. i) Demonstrate both sealed classes and sealed methods with example program
- ii) Illustrate with an example how the events are generated and handled in c#.
27. i) Explain exception handling in C#.
- ii) Write user defined exception for overflow and stack empty exceptions in a Stack class.
28. i) Write a brief note on comparing Properties, Arrays and Indexes.
- ii) Compare and contrast Indexes and delegates
29. i) Explain about the concept of operator overloading in detail.
- ii) Consider a student class with feet and inches as attributes which describes the height of the student. Write a C# program to overload the + operator and to find the average of N students.
30. i) Develop an application in C# example with polymorphism .
- ii) Develop a c# application which demonstrates dynamic polymorphism

COMPUTER ORGANISATION

1. Define the term Computer Architecture.
2. Define Multiprocessing.
3. What is meant by instruction?
4. What is Bus? Draw the single bus structure.
5. Define Pipeline processing.
6. Draw the basic functional units of a computer.
7. Briefly explain Primary storage and secondary storage.
8. What is register?
9. Define RAM.
10. Give short notes on system software.
11. Write down the operation of control unit?
12. Define Memory address register.
13. What is stack & queue?
14. Define Addressing modes.
15. Write the basic performance equation?
16. Define clock rate.
17. List out the various addressing techniques.
18. Draw the flow of Instruction cycle.

19. Suggest about Program counter.
20. List out the types in displacement addressing.
21. What is meant by stack addressing?
22. Define carry propagation delay.
23. Draw a diagram to implement manual multiplication algorithm.
24. Perform the 2's complement subtraction of smaller number(101011) from larger number(111001).
25. Write briefly about computer fundamental system?
26. Explain memory unit functions.
27. Explain memory locations and addresses.
28. Explain Software interface.
29. Explain instruction set Architecture? Give examples.
30. What is bus explain it in detail?
31. Explain briefly about performance evaluation by using various bench marks. List out the types of bench marks and mention its advantage and disadvantage.
32. Explain the operations of stacks and queues.
33. Discuss about different types of addressing modes.
34. Explain in detail about different instruction types and instruction sequencing.
35. Explain Fixed point representation.
36. How floating point addition is implemented. Explain briefly with a neat diagram.
37. Give the difference between RISC and CISC.
38. Write an algorithm for the division of floating point number and illustrate with an example.
39. What are the basic operations performed by the processor?
40. Define Data path.
41. Define Processor clock.
42. Define Latency and throughput.
43. Discuss the principle operation of micro programmed control unit.
44. What are the differences between hardwired and micro programmed control units?
45. Define nanoprogramming.
46. What is control store?
47. What are the advantages of multiple bus organization over a single bus organization?
48. Write control sequencing for the executing the instruction. Add R4,R5,R6.
49. What is nano control memory?
50. What is the nano instruction format of Qm-1?
51. What is the capacity of nano control memory?
52. Define micro routine.
53. What is meant by hardwired control?
54. What are the types of micro instruction?
55. Name the methods for generating the control signals.
56. Draw and explain typical hardware control unit.
57. Draw and explain about micro program control unit.
58. Write short notes on
59. (i)Micro instruction format (ii) Symbolic micro instruction.
60. Explain multiple bus organization in detail.

61. What is Pipelining?
62. What are the major characteristics of a Pipeline?
63. What are the various stages in a Pipeline execution?
64. What are the types of pipeline hazards?
65. Define structural, data, and control hazard.

66. List two conditions when processor can stall.
67. List the types of data hazards.
68. List the techniques used for overcoming hazard.
69. What is instruction level parallelism?
70. What are the types of dependencies?
71. What is delayed branching?
72. Define deadlock.
73. Draw the hardware organization of two stage pipeline.
74. What is branch prediction?
75. Give two examples for instruction hazard.
76. List the various pipelined processors.
77. Why we need an instruction buffer in a pipelined CPU?
78. What are the problems faced in instruction pipeline?
79. Write down the expression for speedup factor in a pipelined architecture.
80. Explain different types of hazards that occur in a pipeline.
81. Explain various approaches used to deal with conditional branching.
82. Explain the basic concepts of pipelining and compare it with sequence processing with a neat diagram.
83. Explain instruction pipelining.
84. What is branch hazard? Describe the method for dealing with the branch hazard?
85. What is data hazard? Explain the methods for dealing with data hazard?
86. Explain the function of six segment pipeline and draw a space diagram for six segment pipeline solving the time it takes to process eight tables.
87. Explain the influence of instruction sets.
88. Draw and explain data path modified for pipelined execution.
89. Explain about various exceptions.
90. What is Memory system?
91. Give classification of memory.
92. Define cache.
93. What is Read Access Time?
94. Define Random Access Memory.
95. What are PROMS?
96. Define Memory refreshing.
97. What is SRAM and DRAM?
98. What is volatile memory?
99. Define data transfer or band width.
100. What is flash memory?
101. What is multi level memories?
102. What is address translation page fault routine, page fault and demand paging?
103. What is associate memory?
104. Define Seek time and latency time.
105. What is TLB?
106. Define Magneto Optical disk.
107. Define Virtual memory.
108. What are the enhancements used in the memory management?
109. Define the term LRU and LFU.
110. Define memory cycle time.
111. What is static memories?
112. What is locality of reference?
113. Define set associative cache.
114. What is meant by block replacement?

115. List the advantages of write through cache.
116. Give formula to calculate average memory access time.
117. Define conflict.
118. What is memory interleaving?
119. What is DVD?
120. Give the features of ROM cell.
121. List the difference between static RAM and dynamic RAM.
122. What is disk controller?
123. How a data is organized in the disk?
124. Illustrate the characteristics of some common memory technologies.
125. Describe in detail about associative memory.
126. Discuss the concept of Memory interleaving and give its advantages.
127. Discuss the different mapping techniques used in cache memories and their relative merits and demerits.
128. What do you mean by virtual memory? Discuss how paging helps in implementing virtual memory.
129. 7. Discuss any six ways of improving the cache performance.
130. 8. Explain the virtual memory translation and TLB with necessary diagram.
131. Explain the organization of magnetic disk and magnetic tape in detail.
132. Define intra segment and inter segment communication.
133. 2. Mention the group of lines in the system bus.
134. 3. What is bus master and slave master?
135. Differentiate synchronous and asynchronous bus.
136. What is strobe signal?
137. What is bus arbitration?
138. Mention types of bus arbitration.
139. What is I/O control method?
140. What is DMA?
141. Why does the DMA priority over CPU when both request memory transfer?
142. List out the types of interrupts.
143. What is dumb terminal?
144. What is the need for DMA transfer?
145. List down the functions performed by an Input/Output unit.
146. Explain with the block diagram the DMA transfer in a computer system.
147. Describe in detail about IOP Organization.
148. Describe the data transfer method using DMA.
149. Write short notes on the following
 - a. Magnetic disk drive
 - b. Optial drives.
150. Discuss the design of a typical input or output interface.
151. What are interrupts? How are they handled?
152. Give comparison between memory mapped I/O and I/O mapped I/O.
153. Explain the action carried out by the processor after occurrence of an interrupt.

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ADVANCED ENTERPRISE JAVA PROGRAMMING

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142. Develop an application to demonstrate Hibernate One-to One Mapping using Annotation

DESIGN AND ANALYSIS OF ALGORITHM

1. What is an Algorithm?
2. Write the Euclid's algorithm for GCD calculation?
3. What is algorithm design Technique?
4. Differentiate time and Space efficiency?
5. Design an algorithm to compute the area and Circumference of a circle
6. List the important problem types
7. How will you measure input size of algorithms
8. Define best, worst and average case efficiency?
9. Define big oh(O),Big omega(Ω) and big theta(Θ) notations
10. List the basic efficiency classes
11. Define recurrence relation?
12. What is non recursion relation?
13. Define nonrecursive algorithm?
14. Define order of growth? Find the order of growth of $\sum_{i=1}^{n-1} (i^2 + 1)^2$
15. Consider the following algorithm S=0
 - i. for i=1 to n do
S=S+i
 - ii. return i

- iii. What does this algorithm compute? How many times is the basic operation executed?

16. Write an algorithm using recursive function to find the sum of n numbers.
 17. What is algorithm optimality
 18. List the factors which affects the running time of the algorithm.
 19. What is meant by substitute methods?
 20. Write the general plan for analyzing Time efficiency of recursive algorithm
 - a. Discuss in detail about fundamentals of algorithmic problem solving?
 - b. Explain the important problem types in detail
 - c. Explain the necessary steps for analyzing the efficiency of recursive algorithms
 - d. Explain the general framework for analyzing the efficiency of algorithm.
 - e. Write the asymptotic notations used for best case ,average case and worst case analysis of algorithms and Write an algorithm for finding maximum element of an array perform best , worst and average case complexity with appropriate order notations
 - f. Explain the method of solving recurrence equations with suitable example.
 - g. Explain the method of solving Non recursive equations with suitable examples
 - h. i)Describe the basic efficiency classes in detail.
 - i. Write an algorithm for Fibonacci numbers generation and compute the following
 1. How many times is the basic operation executed
 2. What is the efficiency class of this algorithm
 - i. Solve the following recurrence relations
 - a) $x(n)=x(n-1) + 5$ for $n > 1$ $x(1)=0$
 - i. b) $x(n)=3x(n-1)$ for $n > 1$ $x(1)=4$
 - c) $x(n)=x(n-1)+n$ for $n > 0$ $x(0)=0$
21. $x(n)=x(n/2)+n$ for $n > 1$ $x(1)=1$ (solve for $n=2^k$)
 22. $x(n)=x(n/3)+1$ for $n > 1$ $x(1)=1$ (solve for $n=3^k$)

a. Consider the following recursion algorithm

Min1(A[0-----n-1])

- i. If $n=1$ return $A[0]$
- ii. Else $temp = \text{Min1}(A[0 \dots n-2])$
- iii. If $temp \leq A[n-1]$ return $temp$
Else
- iv. Return $A[n-1]$

23. What does this algorithm compute?

24. Setup a recurrence relation for the algorithms basic operation count and solve it

1. Define brute force method
2. Write an algorithm for brute force closest –pair problem
3. Define convex hull problem
4. Define exhaustive search
5. Give formula for Manhattan distance computation
6. What is median of three partitioning?
7. Write an algorithm for binary search.
8. What is worst case complexity of binary search?
9. What is Hamiltonian circuit?
10. Define Hungarian method.
11. What are the conditions for travelling salesman problem?
12. Define Knapsack problem?
13. List the general plan in divide and conquer algorithm
14. Write an algorithm for merge sort
15. Write an algorithm for quick sort
16. How the operations performed in Strassen's Matrix multiplication

17. What is the largest number of key comparisons made by binary search in searching for a key in the following array?

3,14, 27, 31, 39, 42, 55, 70, 74, 81, 85, 93, 98

18. Apply the Quick sort to the list

E , X , A , M , P , L , E

19. Compute $2011 * 1130$ using divide and conquer algorithm.

20. Solve the average case recurrence for quick sort.

PART-B

1. Explain selection sort and bubble sort algorithm using brute force method and analyze with examples

2. Describe Sequential search and brute force string matching using brute force method

3. Explain the following in detail

i) Closest pair problem

ii) Convex hull problem

4. Describe exhaustive search in detail

5. Explain in detail quick sorting method. Provide a complete analysis of quick sort with example.

6. Explain in detail merge sort. Illustrate the algorithm with a numeric example. Provide complete analysis of the same.

7. Describe binary search in detail? And provide the complete analysis with example

8. Write short notes on the following

i. Strassen's Matrix Multiplication

ii. Multiplication of largest integer.

9. Apply strassen's algorithm to compute

$$\begin{vmatrix} 1 & 2 & 1 & 1 \\ 0 & 3 & 2 & 4 \\ 0 & 1 & 1 & 1 \\ 5 & 0 & 1 & 0 \end{vmatrix} * \begin{vmatrix} 2 & 1 & 0 & 2 \\ 1 & 2 & 1 & 1 \\ 0 & 3 & 2 & 1 \\ 4 & 0 & 0 & 4 \end{vmatrix}$$

10. Find the optimal solution for the assignment operator given below

	Job1	Job2	Job 3	Job 4
Person 1	4	3	8	6
Person 2	5	7	2	4
Person 3	16	9	3	1
Person 4	2	5	3	7

PROGRAMMING USING C# .NET

1. What is inheritance and explain the use of new keyword in C# inheritance.
2. Define Polymorphism.
3. Define a constructor and list its different types.
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5. Define Delegates.
6. What are the uses of namespaces?
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SEMESTER-III

PROGRAMMING IN PYTHON

TWO MARKS:

1. What is identifier?
2. Define Reserved Keywords
3. Define variable in python.
4. What are the comments in python?
5. Give any two features of python.
6. Write the steps to run python.
7. Define Indentation .
8. What are multiline statements?
9. What do you mean by suite in python?
10. Define Quotes .
11. Give the rules for naming an identifier
12. List out the types of operators.
13. What is the purpose of not in operator?
14. List out the operator performed in precedence.
15. What is the purpose of import statement?
16. Is python a case sensitive language?
17. Define Numbers.

18. List some of the mathematical functions.
19. What are all the trigonometric functions?
20. Define Random number function.
21. What is String?
22. What is String Formatting Operator?
23. Give some of the string formatting functions.
24. Define Tuple.

25. List out some built in tuple functions.
26. What are sets in python?
27. What are all the built in set functions?
28. List out Built in set methods
29. What is Frozen set?
30. What do you mean by python dictionary?
31. Give the properties of Dictionary keys.
32. Give any five built in Dictionary function.
33. Define mutable and immutable objects.
34. Difference between list and tuple in python.
35. How will you create a dictionary?
36. What is the output of print str[2:5] if str="python programming"?
37. Differentiate between del() and remove() methods of list
38. How will you get the length of a list?
39. How will you remove and sort a list?
40. What is the output of print list[2:] if list=['abcd',786,2.23,'tom',70.2]?
41. List out some of the Data type conversions.
42. List out the types of loops.
43. What is the purpose of pass statement?
44. What are all the control statements?
45. Define Range() function.
46. What is the purpose of break statements?
47. What are nested loops?
48. What is the purpose of continue statement?
49. Give the syntax for i) if..elif..else statement

50. Difference between break and continue statement
51. Give the syntax for i) while loop
ii) for loop
52. What are the various decision making statements?
53. Define function
54. How to call a function?
55. What are the arguments in function?
56. What is the purpose of Lambda function?

57. Define recursive function.
58. Give the uses of lambda function.
59. What is the purpose of return statement?
60. Define variable length arguments.
61. What are the characteristics of lambda function?
62. Give any five built in modules with example.
63. How will you create a modules with example?
64. What is the purpose of import statement?
65. Define locating modules.
66. What is namespace and scope?
67. Define reload() function.
68. What do you mean by package in python?
69. Define module.
70. List out the various import statements.
71. Define dir() function.
72. Write a short note on time module.
73. What is timedelta?

74. Define calendar module.
75. What are the functions available in datetime module?
76. What are the file operations?
77. How will you rename a file in python?
78. What are the various modes for opening a file?
79. How will you delete a file in python?
80. What are the attributes for a file object?
81. What are the built in methods available for file handling?
82. Define seek() and tell() methods.
83. What is the purpose of truncate() method?
84. State the methods of processing Directories method available in python.
85. What are the methods of fileno() and file name() with example.
86. Define oops.
87. Write the advantages of oops.
88. What are the built in attribute methods?
89. How will you create an object?
90. What do you mean by built in class attributes?
91. What are Destructors?
92. Define Encapsulation.
93. What is data hiding?
94. Write a short note on method overriding with an example.
95. What is operator overloading?
96. What is called an Inheritance?
97. State the concept of polymorphism.
98. What are the types of inheritance?

99. What are built in exceptions?
100. Define Exception handling
101. What is the purpose of try and except statements?
102. Write a short note on user defined exception
103. Define assertions in python.
104. What is the purpose of using raise() statement?
105. Give the concept of try finally() method
106. What is the purpose of math() function?
107. Define search() function.
108. What are the search and replace method in regular expression?
109. List out some of the regular expression patterns.
110. What is the purpose of find all() method?
111. Define compile() method.
112. Give the importance of re module in regular expressions
113. How will you convert a string to a tuple?
114. What are all the repetition cases?
115. Difference between character classes and special character classes.
116. What are the various file methods?
117. What is the purpose of ** operator?
118. What is input and output functions?
119. What is the purpose of using // operator?
120. How can you get a random number in python?

FIVE MARKS

1. Explain the features of python.
2. What are the ways to run python? Explain
3. Explain the input, output and import functions.
4. What are the Built in List functions?
5. Write a short note on Built in list methods.
6. Define tuple and explain built in tuple functions
7. Explain about the Built in set functions and methods
8. What are the various Built in methods and functions in dictionary? Explain.
9. Explain about Data type conversions.
10. What are the loops? And discuss its types.
11. Explain about nested loops.
12. Explain about i) break statement
ii) continue statement
iii) pass statement

13. Explain various Decision making statements
14. Explain about Function Definition and function calling
15. Discuss the methods in function arguments.
16. What is Anonymous functions? and its characteristics.
17. Explain the uses of Lambda function?
18. Explain Recursive functions with example.
19. How will you create a modules? Explain.
20. Explain about Built in modules.
21. Explain the various techniques in import statement.
22. Write a short note on locating modules.
23. Briefly explain about packages in python.
24. Write a program for date and time modules.
25. What are the various modes for opening a file? Explain
26. Explain how to closing a file?
27. Explain the various methods of file.
28. Write a short note on writing to a file.
29. Explain how to read from a file.
30. Write a short note on
 - i) mkdir() method
 - ii) chdir() method
 - iii) getcwd() method
 - iv) rmdir() method.
31. Explain class definition and how will you creating a objects?
32. Write a short note on Destructors.
33. Explain about encapsulation.
34. What is data hiding? Explain.
35. Explain about the method overriding.
36. Explain single and multiple inheritance.
37. What are the built in class attributes?
38. Briefly explain exception handling in python.
39. Explain about except clause with no exceptions.
40. Explain user defined exceptions.
41. Explain about the assertions in python.
42. Write a short note on
 - i) match() function.
 - ii) search() function

43. What are regular expression patterns? Explain
44. Explain compile() and find all() method

TEN MARKS

1. Briefly explain about the operators.
2. What are all the data types and operations? Explain.
3. Discuss the techniques performed in decision making statements.
4. Explain the types of loops.
5. Discuss about the functions on definition, calling and arguments.
6. Explain about the function with more than one return value.
7. Briefly explain about the modules and packages with examples.
8. Explain about the Date and Time modules.
9. What are all the concepts discussed in file handling? Explain with example.
10. Explain the various methods discussed in directories .
11. Explain about inheritance and its types.
12. Briefly discuss about polymorphism and its methods.
13. What are the various ways performed in exception handling? Explain.
14. Explain about the methods performed in regular expressions.
15. Explain about
 - i) Character class
 - ii) Special character class
 - iii) Repetition cases.
 - iv) find all() method
 - v) compile() method

DISTRIBUTED OPERATING SYSTEM

6 Marks

1. What are the different operating systems?
2. What are the basic functions of an operating system?
3. Discuss about semaphore?
4. Discuss about context switching?
5. Discuss about thread?
6. Discuss about virtual memory?
7. Discuss about thrashing?
8. What is fragmentation? Tell about different types of fragmentation?
9. Discuss about cache memory?

10. Discuss about Memory-Management Unit (MMU)?
11. Explain about the Marshalling?
12. Discuss about process migration?
13. Explain about the process migration?
14. pre-emptive and non-preemptive scheduling?
15. Difference between Primary storage and secondary storage?
16. Discuss about RPC mechanism?
17. Discuss about Clock Skew?
18. Discuss about Edge chasing.
19. Discuss about cache memory?
20. Difference between validation phase and update phase
21. Explain the case study of Global name services.
22. Discuss in detail about domain name services
23. Explain about the Logical time and logical clocks.
24. Discuss about relative path and absolute path?
25. Explain about the group communication
26. Describe about the client server communication
27. Explain characteristics of interprocess communication.
28. Explain UDP datagram communication
29. Explain the various type communications.

15 Marks

1. Brief explain about kernel?
2. Explain Processes and threads
3. Explain Communication and invocation
4. Describe Operating system architecture
5. Explain the different types of cryptographic algorithm
6. Explain Global States and distributed debugging
7. Explain the algorithms for mutual exclusion
8. Discuss about threads in distributed systems
9. Discuss about the distributed file system.
10. Explain about the file server architecture.
11. Explain about the Andrew file system.
12. Write the short notes Distributed mutual exclusion and elections.
13. Discuss in detail about deadlock and locking schemes in concurrency control
14. Explain in detail about concurrency control in transaction.
15. Explain about distributed deadlocks
16. Describe in detail about distributed deadlocks
17. Explain Time stamp ordering in detail
18. What is difference between micro kernel and macro kernel?

19. Brief explain about dead lock?
20. Explain about the Safe State and what is its use in deadlock avoidance?
21. Explain about the process synchronization?
22. Explain about the sub-components of I/O manager in Windows NT?
23. Explain about the types of Real-Time Scheduling?
24. Explain about the DRAM?
25. Brief explain about process
26. Explain about the logical and physical addresses space?
27. Differentiate between Compiler and Interpreter?
28. Explain the concept of the Distributed systems?
29. What is a long term scheduler & short term schedulers?
30. Explain about the Throughput, Turnaround time, waiting time and Response time?
31. Explain the various challenges of distributed systems
32. Write in detail about the characteristics of inter process communication
33. Explain in detail about marshalling
34. Explain about the networking principles.
35. Describe in detail about client - server communication.
36. Write in detail about group communication. Explain in detail about the various system models
37. Describe details about architectural model?
38. Describe details about functional model?
39. Explain the various types of networks?
40. What are the networking issues for distributed System?
41. Explain about the internet protocols?

XML AND WEB SERVICES

TWO MARKS

1. What is XML?
2. Give any two benefits in XML.
3. Give any two advantages in XML.
4. Expand EDI,DOM&SAY.
5. What is DTD?
6. Define voice XML.
7. Advantage of HTML.
8. What is JSON?
9. Write JSON datatype.
10. Write a XML program in hello world.
11. What is type keyword?
12. What is generic keyword?

13. What is reuse?
14. Expand CORBA&DCOM.
15. What is B2B?
16. What is B2C?
17. What is webservice?
18. What is SOA?
19. Give any two limitation of CORBA.
20. Give any two limitation of DOM.
21. What is logical view.
22. What is SOAP?
23. What is WSDL?
24. What is UDDI?
25. Advantages of SOAP
26. Advantages of WSDL
27. Advantages of UDDI
28. What is business to business?
29. What is business to consumer?
30. Role of metadata
31. What is web content management?
32. What is rosettaNet.

5 MARKS

1. Explain the Advantages of XML over HTML
2. What are the advantages of EDI
3. Explain about the advantages over database
4. Write a short note on XML based standards
5. Explain about X Files
6. Briefly about presentation technologies
7. Explain i) XHTML
ii) Voice XML
8. Explain about DTD
9. Explain JSON Syntax
10. What are the Data types? Briefly Explain.
11. Write a short note on Objects
12. Explain JSON Schema
13. Briefly about Type Keyword
14. Explain about Generic Keyword.
15. What is JSON Schema reference? And Explain.
16. Explain about Combining Schema.
17. Explain about business motivation for web service.
18. Explain B2B.
19. Explain B2C
20. What is Logical view? And Explain.
21. Explain the composition of web service.
22. Write a short note on Deployment view.

23. Explain about process view.
24. Briefly note on the Architecture web service.
25. What are the Basic soap syntax and Explain
26. Explain about Sending soap message.
27. What are the features of SOAP.
28. Write a short note on basic WSDL syntax
29. Explain soap binding.
30. Briefly explain the features of UDDI.
31. Explain about business to business.
32. Explain about business to consumer.
33. Explain about enterprise integration.
34. Explain about ebXML.
35. Role of xml in web content management.
36. Role of metadata in web content management.

10 MARKS

1. Briefly explain about DOM
2. Explain about SAX
3. Write briefly about on XSLT
4. Explain X Link
5. What is X-path? and explain
6. Briefly explain about JSON
7. Write briefly about on regular expression
8. Explain about the structuring a complex schema
9. Explain about the \$ schema keyword
10. Briefly explain about the service oriented architecture
11. Explain about the web service technology stack.
12. Explain about application server to peer to peer
13. Briefly explain about the introduction to UDDI
14. Explain a briefly about on SOAP
15. Explain about the WSDL.
16. Explain about component of E-Business XML system.
17. Explain about content management system.
18. Different type of B2B interaction.
19. Components of E-business XML system.

SEMESTER-IV

MOBILE APPLICATIONS DEVELOPMENT

TWO MARKS

1. What is Mobile Application ?
2. What is Android ?
3. What is OHA ?
4. What is XML ?
5. Define IDE.
6. Define Native Applications.
7. Define Dalvik VM.
8. What is Emulator ?
9. List the Versions of Android.
10. Define Web Application.
11. How to make call in Emulator ?
12. How do you send Message from Emulator.
13. Write some Features of IDE.
14. What is the difference between Code Editor and IDE.
15. Give the Properties of IDE.
16. Write any two Advantages of IDE.
17. What is AndroidSDK ?
18. Define Android SDK.
19. Define Database.
20. Define Android Device.
21. Define Mobile Operating System.
22. What is Java ?
23. What is Eclipse ?
24. What is Virtualization ?
25. What is Android File System ?
26. Define Activity Stack.
27. What are Launch Modes ?
28. Define Android Activities.
29. What is Intent ?
30. List the use of Intent.
31. Define Intent Filters.
32. What is Intent PutExtra ?
33. What is Intent GetExtra ?
34. Write the Types of Intent.
35. What is Emulator ?
36. Expand DDMS and API.
37. Define Android Studio.
38. What is Simple Services ?
39. What is Foreground ?
40. What is Background ?
41. Explain Bound Service.
42. Define Broadcast Receiver.
43. What is meant by Content Provider ?
44. Define Content Resolver.
45. What is Database Schema ?

46. Define SQL Database.
47. Define Data Analysis.
48. What is an Adapter in Android ?
49. What is Intent GetExtra ?
50. Write the Types of Intent.
51. What is Emulator ?
52. .Expand DDMS and API.
53. Define Android Studio.
54. What is Layout ?
55. List the major Attributes of Layout.
56. Define Style along with Example.
57. Define Linear Layout.
58. Define Relative Layout.
59. What is meant by Table Layout ?
60. Define Grid View.
61. What is Frame Layout ?
62. Define Menu.
63. List Various Types of Menus.
64. What is Option Menu ?
65. What is Context Menu ?
66. Define PopUp Menu.
67. What is List View.
68. Define Notification.
69. What are the Steps to create and send Notification.
70. What is the use of Button ?
71. What are the various Types of Button.
72. What is the use of Text Field ?
73. What is the use of Check Box ?
74. What are the uses of Alert Dialog ?
75. What is Spinner ?
76. Define Progress Bar.
77. What is Pin Ball Game ?
78. What is Android Alarm Clock ?
79. Define Calendar App.
80. Define Converter App.
81. Define Phonebook App.
82. What is meant by Phonebook Adapter ?
83. Define Doodlz App.
84. What is Tip Calculator App ?
85. Define Weather Viewer App.
86. What is Adapter Layout App ?

5 MARKS

1. List features of the Android Operating System.
2. Define Android Virtual Devices (AVD).
3. Write the directory path where images are stored while developing Android Applications.
4. List all attributes to develop a simple button.
5. Write the syntax for Intent-Filter tag.

6. Define services in Android operating system..
7. Explore the Steps to install and configure Android Studio and SDK .
8. During an activity life cycle which methods invoked only once?
9. What is a the use of setContentView() method?
10. Where will you declare your activity so the system can access it?
11. Where can you define the icon for your Activity?
12. What do you mean by resource?
13. Which object is passed to onCreate () method?
14. To create an Activity which class must be inherit
15. Describe the significance of SQLite database in Anroid.
16. .Discuss Developer console with its purpose.
17. What is Simple Services ? Explain.
18. Dicuss on Broadcast Receiver in detail.
19. Explain in detail about Content Providers.
20. What is Content Resolver ? Explain.
21. How to work with Databases ? Explain.
22. Narrate some Database Applications.
23. Write brief note on Data Analysis.
24. Write a program to display a circular progress bar.
25. What is Layout ? Explain
26. Discuss on Linear Layout.
27. Briefly Explain Relative Layout.
28. Explain briefly Table Layout.
29. Discuss on Frame Layout.
30. Write brief note on Menus.
31. Explain the Types of Menus in detail.
32. Explain in detail about Android Option Menu.
33. Explain in detail about Android Context Menu.
34. Discuss on Android Popup Menu.
35. Elaborate on Listview.
36. Discuss on PinBall Game.
37. What is Calendar App ? Explain.
38. How do we use Converter App ? Explain.
39. Discuss on Phonebook App.

10 Marks

1. Activity Life Cycle.
2. Android Stack
3. Explain in detail about user interface and its types?
4. 4.What are the core components under the Android application architecture?
5. Explain any two in detail.
6. What does an Android APK file contains?
7. To monitor debugging process which tool is useful?
8. Explain other tool of Android in detail.
9. Write a note on Dalvik Virtual Machine component of Android Runtime.
10. Explain more features of Android version which contains NFC.

11. .List all the versions of android.
12. Which file is considered as manifest file in Android application?
13. Explain each node of that file in detail.
14. Write a note on Android device available in market.
15. Explain various resources which can be specified in Android application project. Give an appropriate example for each.
16. Which are the four essential states of an activity?
17. During an activity life cycle which methods invoked only once?
18. What is the use of setContentView() method?
19. Where will you declare your activity so the system can access it?
20. Which object is passed to onCreate () method?
21. To create an Activity which class must be inherits in our sub class?
22. Describe the significance of SQLite database in Android.
23. Discuss Developer console with its purpose.
24. What is Simple Services ? Explain.
25. Discuss on Broadcast Receiver in detail.
26. Explain in detail about Content Providers.
27. What is Content Resolver ? Explain.
28. How to work with Databases ? Explain.
29. Narrate some Database Applications.
30. Write brief note on Data Analysis.
31. Write a Sample program using XML.
32. What is the use of Adapter ? Explain.
33. Discuss on Notification.
34. Write brief note on Buttons.
35. What is Android Text Fields ? Explain.
36. What is Android Check Box ? Explain.
37. Explain in detail about Android Alert Dialog.
38. Discuss on PinBall Game.
39. What is Calendar App ? Explain.
40. How do we use Converter App ? Explain.
41. Discuss on Phonebook App.
42. Explain about Tip Calculator App.
43. What is Weather Viewer App ? Explain.
44. Explain about Adapter Layout File.

SOFTWARE PROJECT MANAGEMENT

1. What is software project management?
2. What is a project?
3. Define process.
4. List the characteristics of software projects.
5. What is contract management?
6. Difference between contract management and technical project management.
7. What is the difference between feasibility study and planning?
9. What are the types of designs in software project?
10. What are the three successive process of software project management?

11. What are the categories of software projects?
12. What are the activities of project management?
13. What is activity plan?
14. What are the elements of product descriptions?
15. What do you mean by project breakdown structure?
16. What are the steps involved in identification of project scope and objectives?

PART B

1. Explain the various activities covered by software project management.
 2. Give an outline of step wise planning activities for a project with neat diagram.
 3. Diagrammatically explain the ISO 12207 SDLC activities.
 4. List the Outline of stepwise project planning.
 5. For each stage of a typical IS development project list the type of personnel who are likely to be involved.
 6. Identify the data that you would collect to ensure that during execution of project things are going according to plan.
-

UNIT II

PROJECT EVALUATION

PART A

1. What is strategic assessment?
2. Difference between strategic assessment and technical assessment.
3. How to identify and estimate the cost of project?
4. What is cash flow?
5. How will you find the present value of future cash flow?
6. Write short notes on cash flow forecasting life cycle?
7. What is payback period?
8. What is ROI? How it is calculated?
9. Calculate the ROI for a software project development, where the net profit is 60,000 and the total investment is 300,000.
10. How to calculate the net present value for a software project?
11. Define risk profile analysis.
12. What are the different types of cost related to project development?
13. How are risks identified?
14. What is IRR? How is calculated?
15. What are the advantages of using IRR method?
16. What is meant by project portfolio?
17. How are decision trees helpful in risk handling?

PART B

1. Describe how cost- benefit evaluation techniques can be used to choose the best among competing project proposal.
2. Discuss the typical product life cycle cash flows in project development.
3. Explain how project can be evaluated against strategic, technical and economic criteria.
4. What is risk management? How the risks are evaluated in software projects?
5. Explain in detail about the Amanda's decision tree.
6. Discuss cash flow forecasting.

7. What do you mean by cost benefit analysis? Explain the different categories of cost in detail.

UNIT III

ACTIVITY PLANNING PART A

1. List the objectives of planning?
2. What are the advantages of project scheduling?
3. Define activity.
4. What is Activity –on- arrow (AOA) and Activity-on-node (AON)?
5. What are the different approaches used in identifying activities?
6. Define a product breakdown structure.
7. What is a hybrid approach of project scheduling?
8. What is SSADM?
9. What is forward pass?
10. Difference between forward pass and backward pass.
11. Write short notes on Hammock activities.
12. Why a network should not contain dangles?
13. List the types of activity float?
14. How to shorten the project duration?
15. What is Risk management?
16. How are risk classified?
17. List the factors involved in risk planning.
18. What are steps involved in planning for risk?
19. Define a brainstorming technique.
20. Write short notes on Hazards identification.

PART B

1. Explain the objectives of activity planning in detail.
 2. Explain the different approaches of project activities.
 3. What is project schedule? Explain the stages of project schedules.
 4. Explain with an example how critical path can be identified in precedence networks.
 5. Discuss the network model represented by the CPM network.
 6. How to formulate a network model in projects?
 7. Explain the categories of risk framework.
 8. Briefly explain the risk planning in project development.
 9. Explain risk planning and control in detail.
 10. Define hazard. How are hazards identified and analyzed?
 11. Describe with an example how the effect of risk on project schedule is evaluated using PERT.
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UNIT IV

MONITORING AND CONTROL PART A

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1. What are the different ways of collecting data?
 2. What are the different categories of reporting?
 3. Define a checkpoint.
 4. What are the techniques used in visualizing progress.
 5. Write any two advantages of function point analysis.
 6. Write short notes on cost monitoring?
 7. List the change control procedures?
 8. What is earned value?
 9. What is monitor earned value?
 10. List the methods for assigning earned value in earned value analysis.
 11. List the various prioritizing levels to monitor the project?
 12. What are the roles of configuration librarian's?
 13. What are the supply processes in managing contract?
 14. What are the different types of contracts?
 15. List the various typical terms of a contract?
 16. Write short notes on contract management?
 17. Define change control.

PART B

1. Explain in detail about creating the framework for monitoring & control.
2. What are the different types of visualizing progress explain in detail?
3. Explain how to get back the project to target.
4. Assessing the state of project.
5. Controlling changes to a project requirement.
6. Discuss the change control procedures in detail.
7. Explain the managing contract under ISO 12207 approach.
8. Explain the different stages in contract placement.
9. Explain the earned value analysis methods.

UNIT V

MANAGING PEOPLE AND ORGANIZING TEAMS

PART A

-
1. Define organizational behaviour.
 2. List the various motivation theories.
 3. What is motivation under the Taylor's model?
 4. Mention the two factors of Herzberg's theory.
 5. Write down the stages of team formation model.
 6. What are the methods used to improve motivation?
 7. Define job enlargement and job enrichment.
 8. Mention the different categories of decisions.
 9. How are leadership style classified?
 10. How to work in a group?
 11. Write short notes on leadership?

12. Define organization.
13. Define stress.
14. Give the difference between personal and organizational stress.
15. What are the responsibilities to make safety?
16. How is stress caused?

PART B

1. Explain the Oldham-hackman job characteristic model.
2. Explain in detail about decision making.
3. Explain how new staff can be selected and inducted into a project.
4. Explain to improve group performance.
5. List the factors that are involved in making a team. Explain the characteristics.
6. Discuss in detail about the organizational structures.
7. Define motivation. Explain the theories of motivation.
8. Explain the methods to increase staff motivation.
9. Write a note on leadership styles.
10. Write notes on stress handled in development process.
11. Give a brief note on health and safety issues.