

ASSIGNMENT - 1, DEC - 2016.

M.C.A. FIRST YEAR DEGREE

PAPER- I : INFORMATION TECHNOLOGY

Maximum : 30 MARKS

Answer ALL questions.

- 1) What is MIS? Explain role of MIS in an organisation.
 - 2) Explain in detail about input and output technologies.
 - 3) Discuss about various types of personal application software.
 - 4) What is the role of computers in payroll processing.
 - 5) What are the functions of modems.
 - 6) Write a note on applications of software.
 - 7) Write a short notes on e-mail.
 - 8) What is a file.
 - 9) What is a processor.
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PAPER- I : INFORMATION TECHNOLOGY

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain about various topologies of LAN and WAN architectures.
 - 2) What is WWW? Differentiate between intranet and internet.
 - 3) What is a memory? Write about their types.
 - 4) Write about the traditional file management system and its advantages.
 - 5) Write a note on different organization levels.
 - 6) How a http works in the URL.
 - 7) Define system support program.
 - 8) What is team ware.
 - 9) What are cookies.
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PAPER- II : PROGRAMMING WITH C++

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the control structures in C++ using examples for each.
 - 2) Generate the types of data with operators in detail.
 - 3) a) Write a program for passing an array to the function & find the sum of array elements.
b) Discuss about arrays in detail.
 - 4) Explain Data Encapsulation & data abstraction.
 - 5) Explain functions with example.
 - 6) Explain the parts of C++ program. Write a program to find factorial of a given number.
 - 7) What is scope access operator? Write a program to use scope access operator.
 - 8) What is destructor?
 - 9) What is virtual function?
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PAPER- II : PROGRAMMING WITH C++

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain in detail about constructor of overloading constructor with program.
 - 2) How to program with templates? Explain with suitable example.
 - 3) Explain about default parameter & parameter casting.
 - 4) How to overload main () function? Explain .
 - 5) What is Recursive constructor?
 - 6) Give some exception handling mechanisms.
 - 7) Define inheritance & give its type.
 - 8) Define container class.
 - 9) Give the difference between vector & list.
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PAPER- III : COMPUTER ORGANIZATION

Maximum : 30 MARKS

Answer ALL questions.

- 1) What is a system BUS? Describe its architecture with a neat diagram.
 - 2) Describe the structure of magnetic disk and tape.
 - 3) Explain different types of interrupts with examples.
 - 4) Give the structure of computer system with a neat diagram.
 - 5) Explain the different states of an instruction execution.
 - 6) Explain the functions of ALU.
 - 7) Explain about secondary storage devices.
 - 8) What is a memory
 - 9) What is a bus ? List out different types.
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PAPER- III : COMPUTER ORGANIZATION

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the internal structure of CPU with a neat diagram.
 - 2) Discuss about the processor organization.
 - 3) What is stored program organization.
 - 4) Explain about Instruction cycle.
 - 5) Explain about floating point addition and subtraction.
 - 6) Explain about the different types of registers.
 - 7) What is PC and IR .
 - 8) Write a note on peripheral devices.
 - 9) What is seek time.
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PAPER- IV : DATA STRUCTURES

Maximum : 30 MARKS

Answer ALL questions.

- 1) a) Describe the stack and queue along with the operations defined on them.
b) Write a procedure to convert a given infix expression to prefix.
 - 2) a) What is a circular linked list? Explain the operations on a circular linked list.
b) Write an algorithm for polynomial addition using singly linked lists.
 - 3) Define a Binary tree and explain various representations of a Binary Tree.
 - 4) What is a Sparse matrix? Explain how is it represented.
 - 5) Explain the Binary search algorithm.
 - 6) Represent the following expression in Binary Tree format.
 $E = (a - b) / (c * d + e)$
 - 7) Convert the following infix expression into postfix form:
 $A / B ** C + D * E - A * C$
 - 8) Define a data structure.
 - 9) What is an Abstract Data Type?
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PAPER- IV : DATA STRUCTURES

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the Quick sort method.
 - 2) Explain different Tree traversal methods.
 - 3) What is an algorithm? How do you estimate the time complexity of an algorithm?
 - 4) Write a Procedure to insert an element in to a doubly linked list.
 - 5) Explain Binary Search Trees.
 - 6) Explain Hashing.
 - 7) What is a Tree?
 - 8) What is linear search?
 - 9) What is the Height of a Tree?
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PAPER - V : OPERATING SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Describe the process state transition diagram with one and two states.
 - 2) Write short note on deadlock avoidance. Explain the Bankers algorithm for deadlock avoidance.
 - 3) What is 'Dining Philosophers Problem'? Give the solution for it.
 - 4) Write short notes on different types of operating systems.
 - 5) Explain the process scheduling criteria.
 - 6) Describe the Test And Set instruction.
 - 7) Show that the Peterson's algorithm satisfies the requirements of a mechanism to control access to a critical section.
 - 8) What is boot sector?
 - 9) What is the use of buffering?
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PAPER - V : OPERATING SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain about hardware I/O organization.
 - 2) Discuss about different program related threats.
 - 3) What is segmentation? Write about segmentation with paging.
 - 4) Explain the concept of file locking and blocking.
 - 5) Write about storage disks.
 - 6) Explain various approaches to intrusion detection.
 - 7) Define synchronization.
 - 8) What is file mapping?
 - 9) What is monitor?
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PAPER - VI : DATABASE MANAGEMENT SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Describe one-to-many and many-to-many recursive associations with an illustrative example.
 - 2) What is binary tree? Write an algorithm to create a binary tree data structure. Apply the algorithm on the data 102, 106, 104, 101, 110, 109, 107, 103, 108, 105.
 - 3) What is the role of normalization in database design? Explain BCNF with an example.
 - 4) What are the components of database management system? Explain them in detail.
 - 5) Illustrate the construction of an indexed sequential file with a suitable example.
 - 6) What are the three types of network data models? Explain them with an example.
 - 7) What is stack? Explain stack data structure.
 - 8) What is decision support system?
 - 9) What is a ring data structure?
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PAPER - VI : DATABASE MANAGEMENT SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the following PC-FOCUS commands.
 - a) FILETALK
 - b) AUTOMOD
 - c) TABLETALK
 - 2) List different commands of relational algebra and explain them in brief.
 - 3) What is conceptual data model? What are its inputs and outputs.
 - 4) What are the symbols used in database action diagram? Explain them in brief.
 - 5) Decrypt the following stream of data using the tree with a degree of 2 and three levels.
(a, b, d, h, i, e, j, k, c, f, l, m, g, n, o).
 - 6) Give the skeleton of DDL program of IDMA.
 - 7) What is LAM?
 - 8) What is the use of the command GET NEXT?
 - 9) What is timestamp?
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PAPER - VII : ACCOUNTS AND FINANCE

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the rules relating to double entry system of accounting.
 - 2) State the techniques employed to manage working capital.
 - 3) Bring out the nature and significance of finance function.
 - 4) Matching concept.
 - 5) Subsidiary books.
 - 6) Trial balance.
 - 7) Flexible budget.
 - 8) Journal proper.
 - 9) Cost centre.
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PAPER - VII : ACCOUNTS AND FINANCE

Maximum : 30 MARKS

Answer ALL questions.

- 1) Classify costs with suitable examples.
 - 2) How do you draw balance sheet of a corporate body?
 - 3) Profitability ratios.
 - 4) Funds flow statement.
 - 5) Horizontal analysis.
 - 6) Errors of commission.
 - 7) Wealth maximisation.
 - 8) Cash from operations.
 - 9) Net working capital.
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PAPER - VIII : DISCRETE MATHEMATICS

Maximum : 30 MARKS

Answer ALL questions.

- 1) a) Explain different methods of proof with example.
b) Prove or disprove the validity of the following argument using Quantified proposition
All men are fallible
All kings are men
Therefore all kings are fallible.
 - 2) a) Prove that $\exists x P(x) \wedge Q(x) \Rightarrow \exists x P(x) \wedge \exists x Q(x)$.
b) State all the rules of Logical Inference.
 - 3) a) Find the Recurrence Relation satisfying $Y_n = A(3)^n + B(-4)^n$.
b) Write a brief note on Recursive Algorithms
 - 4) Define strong Mathematical Induction.
 - 5) Define Recursive subroutine.
 - 6) Define Equivalence Relation.
 - 7) Define order of the Recurrence Relation.
 - 8) Define Tautology.
 - 9) What is Recursion?
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PAPER - VIII : DISCRETE MATHEMATICS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Make logic circuits for the following Boolean Expressions.
 - a) $A'B + ABC + C' + B'$
 - b) $\overline{wyz} + wz + \bar{y}z + xyz$

 - 2) a) Show that the sum of all vertex degree is equal to twice the no.of edges.
b) Explain Travelling Salesman problem.

 - 3) Let A be a set Define P(A) the power set of A Find P(A) when $A = \{1, 2, 3\}$.

 - 4) What is Ackerman's function?

 - 5) Explain the concept of graph Isomorphism.

 - 6) Show that every planar graph is 5-olarable.

 - 7) What is Hasse diagram?

 - 8) Define biparite graph.

 - 9) What Eulerian path.
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