

(DMCA101)

ASSIGNMENT- 1
M.C.A.DEGREE EXAMINATION, DEC- 2017
(First Year)
INFORMATION TECHNOLOGY
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Discuss about the contribution of IT industry to our economy.
- Q2)** Define OS. State its types and functions.
- Q3)** a) What is a translator? Describe various types of translators.
b) Explain different types of printers.
- Q4)** Explain Decision Support System and its characteristics.
- Q5)** Explain the role of MIS in an organization.
- Q6)** Explain about modem and Router.
- Q7)** Differentiate between LAN and WAN.
- Q8)** What is Text mining?
- Q9)** What is EDP? Explain.

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ASSIGNMENT- 2
M.C.A.DEGREE EXAMINATION, DEC- 2017
(First Year)
INFORMATION TECHNOLOGY
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Write a few words about email.
- Q2)** Briefly describe different types of computers.
- Q3)** Differentiate between compiler and interpreter.
- Q4)** Briefly describe about extranet.
- Q5)** Define FTP.
- Q6)** What is a knowledge base?
- Q7)** Define a web server.
- Q8)** What is http?
- Q9)** What is an assembler?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
PROGRAMMING WITH C++
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain control structures in detail.
- Q2)** Explain any 5 string functions with suitable examples for each.
- Q3)** Define constructor. Write a program to implement a dynamic constructor.
- Q4)** Explain virtual functions in detail.
- Q5)** Define a template. Explain function and class templates.
- Q6)** Explain container class.
- Q7)** Write a note on *static data members* of a class.
- Q8)** Differentiate between overloading and overriding.
- Q9)** Elaborate any 3 string functions.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
PROGRAMMING WITH C++
MAXIMUM MARKS-30
Answer ALL Questions

Q1) Explain the concept of constructor overloading.

Q2) Explain inline functions.

Q3) Explain different forms of catch()

Q4) Explain the access specifiers of a class.

Q5) Define a constructor.

Q6) What is a virtual destructor?

Q7) Define scope resolution operator.

Q8) What is a reference variable?

Q9) What is a friend function?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
(Paper - III) : COMPUTER ORGANIZATION
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain Booth multiplication algorithm in detail.
- Q2)** Explain about cache design parameters.
- Q3)** Explain the operational component of a computer.
- Q4)** Explain in detail different secondary storage device organizations.
- Q5)** Discuss IEEE standard for binary floating point arithmetic.
- Q6)** Write a note on addressing modes.
- Q7)** Explain logic gates.
- Q8)** What are the functions of CPU?
- Q9)** Write about interrupt service routine.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
(Paper - III) : COMPUTER ORGANIZATION
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** What are the basic elements of floating-point addition and subtraction?
- Q2)** Write about centralized and distributed arbitration.
- Q3)** Differentiate between RISC and CISC.
- Q4)** Write about the basic rules of Boolean Algebra.
- Q5)** What is Buffer Gate?
- Q6)** What is DMA?
- Q7)** What is processor?
- Q8)** What is upward compatible?
- Q9)** What is status register?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
DATA STRUCTURES
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain Merge sort and Radix sort techniques using the following data : 5,3,25,6,10,17,1,2,18,8.
- Q2)** Construct a binary search tree using the following data : 48,43,23,38,30,21,43,66 and perform the operations delete 25, insert 6, delete 5 on the constructed tree.
- Q3)** Define a Queue. Explain DUEUE and its operations with a pseudocode.
- Q4)** Write a program to implement stack using SLL.
- Q5)** Write an algorithm to demonstrate the operations performed on a CLL.
- Q6)** Explain loop control structures.
- Q7)** State the advantages of linked lists over arrays.
- Q8)** Write a program to find the factorial of a given number using recursion.
- Q9)** Convert the expression $a+c+d/e^f*g$ into post-fix expression with the help of a stack.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
DATA STRUCTURES
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain Bubble sort with the help of the following values : 38,81,22,48,69,13,93,58.
- Q2)** Explain insert and delete operations on a priority queue.
- Q3)** Explain Binary search and write an algorithm for implementing it.
- Q4)** Explain operations on a DLL.
- Q5)** Define pointer dereferencing.
- Q6)** State any 2 uses on a pointer.
- Q7)** Define node in Linked list.
- Q8)** Define sparse matrix.
- Q9)** Define an Almost complete binary tree.

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
OPERATING SYSTEMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** What are the components of OS? State its services.
- Q2)** Explain any 2 page replacement algorithms.
- Q3)** Explain the concept of demand paging.
- Q4)** Explain Dining Philosophers problem. State a solution to it using semaphores.
- Q5)** Discuss the issues in real-time and multiprocessor scheduling.
- Q6)** What is Fragmentation? Explain Internal and External Fragmentation.
- Q7)** Explain Dekker's algorithm.
- Q8)** Explain the entries in process control block.
- Q9)** What are the necessary conditions for a deadlock to occur?

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
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OPERATING SYSTEMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain about memory mapped I/O.
- Q2)** What is a Monitor? Explain.
- Q3)** Write about partition selection algorithms.
- Q4)** Describe the layered structure of file system.
- Q5)** Define Thread.
- Q6)** What is swap space?
- Q7)** Define relocation.
- Q8)** What is thrashing?
- Q9)** What is a worm?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
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DATA BASE MANAGEMENT SYSTEMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Define DBMS. State its structure.
- Q2)** Elaborate different data models.
- Q3)** Explain various steps involved in database design.
- Q4)** Write an algorithm to construct a b-tree with degree 3 and 2 levels using the following data 300,110,130,250,120,105,150,118,145,135,115,200,140,125.
- Q5)** State the importance of database recovery and discuss about various database recovery procedures.
- Q6)** What is a Transaction? Explain its properties.
- Q7)** What is concurrency? How is it achieved in DBMS?
- Q8)** State the applications of hierarchical model.
- Q9)** State how a conceptual model is mapped into a relational model.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
DATA BASE MANAGEMENT SYSTEMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Differentiate between 3NF and BCNF.
- Q2)** Illustrate Functional dependency with a suitable example.
- Q3)** Write a short note on the following keys : primary, super, candidate, secondary and super keys.
- Q4)** How is Relational Database model advantageous that other models.
- Q5)** What is an Integrity constraint?
- Q6)** What is a Schema?
- Q7)** What are spurious tuples?
- Q8)** What is a weak entity?
- Q9)** Define a composite attribute.

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
ACCOUNTS & FINANCE
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Define cash book. Explain the difference between cash account and cash book.
- Q2)** What are final accounts? What adjusting entries would you record for the following:
- a) Depreciation,
 - b) Discount allowed,
 - c) Manager's commission,
 - d) Outstanding salary.
- Q3)** What is the difference between cost accounting and financial accounting?
- Q4)** Briefly explain about various financial ratio's. State the limitations of financial ratio's.
- Q5)** Explain briefly the essentials of sound working capital management.
- Q6)** Accounting concepts.
- Q7)** Advantages of subsidiary books.
- Q8)** Three column cash book.
- Q9)** Funds flow statement.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
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ACCOUNTS & FINANCE
MAXIMUM MARKS-30
Answer ALL Questions

Q1) Financial management.

Q2) What do you mean by ABC analysis? Describe its advantages.

Q3) Profitability group.

Q4) Acid-test ratio.

Q5) Cash book.

Q6) Purchases book.

Q7) Journal proper.

Q8) Bank over draft.

Q9) Quick ratio.

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(First Year)
DISCRETE MATHEMATICS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** a) Construct the truth table for,
 $[(p \rightarrow q) \wedge (q \rightarrow r)] \rightarrow [p \vee q] \rightarrow r$.
- b) Verify the validity of the following argument using rules of inferences.
If a baby is hungry, then the baby cries.
If the baby is not mad, she does not cry.
If the baby is mad, then she has a red face.
Therefore, if a baby is hungry then she has a red face.
- Q2)** a) State various properties defined on a relation with example.
b) Solve the recurrence relation $a_n - 8a_{n-1} + 21a_{n-2} - 18a_{n-3} = 0$.
- Q3)** a) Find the number of non-negative integer solutions to the equation
 $x_1 + x_2 + x_3 = 25$.
- b) Show that , $f(x,y) = x + y$ is a primitive recursive function.
- Q4)** a) Simplify the Boolean expression $(a + b)' + (a' + b')$.
b) Prove that in any non-directed graph, sum of the degrees of the vertices is even.
- Q5)** a) State and Prove Euler's theorem in a plane graph.
b) Find the Transitive Closure of a relation $R = \{(a, b), (b, c), (c, d), (d, e)\}$.

Q6) Define isomorphism between two graphs and give an example.

Q7) Define Hasse Diagram and give an example.

Q8) State all the rules of inferences.

Q9) Define Chromatic number of a graph and give an example.

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DISCRETE MATHEMATICS
MAXIMUM MARKS-30
Answer ALL Questions

Q1) Let $f(x)=x+2, g(x)=x^2, h(x)=10x+1$. Then find $(fog)(x), (goh)(x), (fogoh)(x)$.

Q2) Define Recurrence relation.

Q3) Define Tautology, Contradiction and give examples.

Q4) Define regular function and give an example.

Q5) Define Recursive function.

Q6) Define POSET.

Q7) Define Lattice.

Q8) Define Complete graph.

Q9) Define Hamiltonian graph.