(DMCA101)

ASSIGNMENT - 1
M.C.A.DEGREE EXAMINATION, MAY– 2019
First Year
INFORMATION TECHNOLOGY
Maximum : 30 MARKS
Answer ALL questions.

Q1) Write about capabilities expected of information systems in modern organizations.

Q2) Discuss various primary and secondary storage devices.

Q3) Explain how a database approach overcomes the problems associated with the traditional file environment and also describe different data models.

Q4) Discuss different categories of programming languages and their characteristics.

Q5) Explain about evaluation of internet and describe various services of internet.

Q6) Describe the components of computer-based information systems.

Q7) Write about Porter's five forces Model.

Q8) Describe about different system software's.

Q9) Write about star and ring network topologies.

(DMCA101)

ASSIGNMENT - 2
M.C.A. DEGREE EXAMINATION, MAY – 2019
First Year
INFORMATION TECHNOLOGY
Maximum : 30 MARKS
Answer ALL questions.

Q1) Write about different types of data transmission.

Q2) Briefly explain about client/server computing and peer-to-peer computing.

Q3) Differentiate internet and intranet.

Q4) Write about services of operating system.

Q5) What is meant by business pressure?

Q6)Define software package.

Q7)Define network protocol.

Q8) Define flash memory.

Q9) What is web browser?

(DMCA102)

ASSIGNMENT - 1
M.C.A. DEGREE EXAMINATION, MAY – 2019
First Year
PROGRAMMING WITH C++
Maximum : 30 MARKS
Answer ALL questions.

Q1) Discuss different classification of Operators in C++.

Q2) Illustrate function overloading and parameter passing mechanism in C++.

Q3) How to declare and initialize the strings in C++? Explain about different string handling functions with example.

Q4) What is inheritance? Discuss different types inheritance with proper examples.

Q5) Explain about function templates and class templates with suitable example.

Q6) Write about constants and variables in C++.

Q7) Write about while and do – while loops in C++.

Q8) Explain about friend function with suitable example.

Q9) Write about parameter constructor and copy constructor in C

(DMCA102)

ASSIGNMENT - 2
M.C.A. DEGREE EXAMINATION, MAY – 2019
First Year
PROGRAMMING WITH C++
Maximum : 30 MARKS
Answer ALL questions.

Q1) Write about dynamic binding and late binding in C++.

Q2) Explain about nested classes with example.

Q3) What is operator overloading? Give the restrictions.

Q4) Write short notes on vectors.

Q5) What is enumerated data type?

Q6)Define virtual function.

Q7)What is use of this pointer?

Q8) Define encapsulation.

Q9) Define template.

(DMCA103)

ASSIGNMENT - 1
M.C.A. DEGREE EXAMINATION, MAY – 2019
First Year
COMPUTER ORGANIZATION
Maximum : 30 MARKS
Answer ALL questions.

Q1) List and briefly define the main structural components of a computer.

Q2) What type of transfers must a computer's interconnection structure (e.g., bus) support.

Q3) What common characteristics are shared by all RAID levels?

Q4) Explain briefly regarding Floating Point Arithmetic.

Q5) Discuss about Instruction Pipelining.

Q6) What, in general term, is the distinction between computer structure and computer function.

Q7) List and briefly define the functional groups of signal lines for PCI.

Q8) Briefly define seven RAID levels.

Q9) Define the terms track, cylinder and sector with a neat diagram.

(DMCA103)

ASSIGNMENT - 2
M.C.A. DEGREE EXAMINATION, MAY – 2019
First Year
COMPUTER ORGANIZATION
Maximum : 30 MARKS
Answer ALL questions.

Q1) Discuss IEEE standard for Binary Floating Point Representation.

Q2) Write about Two's Complement Representation.

Q3) How do we determine Pipeline Performance?

Q4) Explain Timing of Synchronous Bus Operations.

Q5) What is the importance of Addressing Modes?

Q6)Discuss about ALU.

Q7) Explain Optical Memory.

Q8) What is Vacuum tubes?

Q9) What is computer top level structures?

(DMCA104)

ASSIGNMENT - 1

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

Data Structures

Maximum : 30 MARKS

Answer ALL questions.

Q1) Explain about abstract data model and various data structure operations.

Q2) Illustrate different pattern matching algorithms with suitable example.

Q3) How to represent linked list in computer memory? Write a procedure to insert an element into and delete an element from single linked list with suitable example.

Q4) Explain about threaded binary tree and binary search tree operations with example.

Q5) The following values are to be stored in hash table: 25, 42, 96, 101, 102, 162, 197. Describe how the values are hashed by using division method of hashing with table size of 7.

Q6) Briefly explain about big O notation and Omega  notations of algorithm.

Q7) What is record? Describe the record storage in compute memory.

Q8) Explain any four string handling functions with proper example.

Q9) What is recursion? How the recursion is implemented through stack?

(DMCA104)

ASSIGNMENT - 2

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

Data Structures

Maximum : 30 MARKS

Answer ALL questions.

Q1) Write pseudo code to implement queue operations.

Q2) What is AVL tree? Explain L-L and R-L, rotations in AVL trees with example.

Q3) Explain about deletion and insertion operations in B – trees.

Q4) Explain about insertion sort algorithm with example.

Q5) Define time complexity.

Q6) What is pointer?

Q7) Define circular queue.

Q8) Define heap condition.

Q9) Define hashing.

(DMCA105)

ASSIGNMENT - 1

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

OPERATING SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

Q1) Explain the various types of operating systems.

Q2) Explain implementation of producer's/Consumers problem using monitor.

Q3) What is paging? Discuss the various page replacement strategies.

Q4) Write about the following in detail:

i) Disk structure
ii) Indexed allocation
iii) Shortest-Seek-Time-First (SSTF) scheduling.

Q5) Discuss about various threats are detecting prevented by the operating system.

Q6) Describe different process states with neat diagram.

Q7) Explain about shortest job first scheduling algorithm with example.

Q8) Write about internal and external fragmentation.

Q9) Explain about overlays.

(DMCA105)

ASSIGNMENT - 2

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

OPERATING SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

Q1) Explain the page fault handling routine with diagram.

Q2) Write short notes on kernel I/O subsystem.

Q3) State the various attributes of file and their purpose.

Q4) Explain the terms worm and viruses with example.

Q5) What is turnaround time of process scheduling?

Q6)Define segmentation.

Q7) Define critical section.

Q8) Define demand paging.

Q9) Define deadlock.

(DMCA106)

ASSIGNMENT - 1

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

DATABASE MANAGEMENT SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

Q1) What is information system? Discuss components of information.

Q2) Explain about Sequential and Indexed file organizations with suitable example.

Q3) Discuss different classification of data models based on their physical storage.

Q4) Explain about information management description and data manipulation in hierarchical database management systems.

Q5) Explain about database recovery mechanism.

Q6) Describe the different associations between field.

Q7) Write about physical address pointer and relative address pointer.

Q8) Explain about multi list data structure with example.

Q9) Write about first and second normal forms with suitable example.

(DMCA106)

ASSIGNMENT - 2

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

DATABASE MANAGEMENT SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

Q1) Explain about data volume and usage analysis.

Q2) Describe any four DML commands of IDMS.

Q3) Write about different relational algebra operations.

Q4) Give the responsibilities of DBA.

Q5) Define field.

Q6) What is meant by metadata?

Q7) What is PC – FOCUS?

Q8) What is E – R model?

Q9) What is concurrency?

(DMCA107)

ASSIGNMENT - 1

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

ACCOUNTS & FINANCE

Maximum : 30 MARKS

Answer ALL questions.

Q1) Briefly explain about different types of subsidiary books.

Q2) Write about errors disclosed and not disclosed by trail balance.

Q3) Discuss about elements considered in financial decision making.

Q4) Give an overview on accounting ratios and financial ratios.

Q5) What is double entry system? How can it be superior to single entry system? Explain.

Q6) Accounting concepts.

Q7) Nature of cost accounting.

Q8) Need for cash flow statement.

Q9) Benefits of Ratio analysis.

(DMCA107)

ASSIGNMENT - 2

M.C.A. DEGREE EXAMINATION, MAY – 2019

First Year

ACCOUNTS & FINANCE

Maximum : 30 MARKS

Answer ALL questions.

Q1) Master budget.

Q2) Preparation of B.R.S.

Q3) Making of journal entries.

Q4) Concept of cost analysis.

Q5) Working capital.

Q6) Cash book.

Q7) Adjustments.

Q8) Funds flow statement.

Q9) Quick ratio.

(DMCA108)

ASSIGNMENT - 1

M.C.A. DEGREE EXAMINATION, MAY– 2019

First Year

DISCRETE MATHEMATICS

Maximum : 30 MARKS

Answer ALL questions.

Q1) a) Prove that, for any three propositions p, q, r, the compound proposition $[(p \to q) \wedge (q \to r)] \to (p \to r)$ is tautology.

b) Obtain principle disjunctive normal form of the following.
$P \to \{(p \to q) \wedge \neg(\neg q \vee \neg q)\}$

Q2) a) Prove that $f^{-1} \circ g^{-1} = (g \circ f)^{-1}$, where $f : Q \to Q$ such that $f(x) = 2x$ and $g : Q \to Q$ such that g(x) = x+2 are two functions.

b) On the set of integers, the relation R is defined by "aRb" if and only if "$(a - b)$ is even integer". Show that R is an equivalence relation.

Q3) Solve the following recurrence relations:

i) $a_{n+1} - 2a_n = 2^n, n \geq 0, a_0 = 1$

ii) $a_n = 3a_{n-1} - 2a_{n-2}$ for $n \geq 2$

Q4) a) A non-empty subset S of G is a sub group of (G, *) iff for any pair of elements $a, b \in$ S.

b) Let G be the set of all nonzero real numbers, for $a*b = ab/2$, show that (G,*) is Abelian group.

Q5) What is partial order and partial order set? Draw Hasse diagram for poset (P(A), $\subset$) where A = {1, 2, 3, 4} is the power set of A.

Q6) Prove that the logical equivalence of $[p \wedge (p \to q) \wedge r] \equiv [(p \vee q) \to r]$.

Q7) Show that $\forall x(P(x) \vee Q(x)) \equiv \forall x P(x) \wedge \forall x Q(x)$.

Q8) In how many ways can 4 mathematics books, 3 history books, 3 chemistry books and 2 sociology books be arranged on the shelf so that all books of the same subject are together?

Q9) What are the reflexive, symmetric and transitive relations?

(DMCA108)

ASSIGNMENT - 2

M.C.A. DEGREE EXAMINATION, MAY– 2019

First Year

DISCRETE MATHEMATICS

Maximum : 30 MARKS

Answer ALL questions.

Q1) Let $f(x) = x+2$, $g(x) = x-2$, $h(x) = 3x$ for $x \in$ R where R is set of real numbers. Find gof, hof.

Q2) Show that the semi group (Z, +) and (E, -) where E is the set of even integers are isomorphic.

Q3) Solve the linear recurrence relation: $a_0 = 4a_{n-1} + 5a_{n-2}$ with $a_1 = 2$, $a_2 = 6$.

Q4) Let G be group and let $a, b, c \in$ G, then show that:

i) $ab=bc \Rightarrow b=c$

ii) $(ab)^{-1} = b^{-1}a^{-1}$

Q5) Define monoid.

Q6) Define Lattice.

Q7) Define binary relation.

Q8) Define disjunctive normal form.

Q9) What is generating function.

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