ASSIGNMENT QUESTION PAPER

MCA (First Year)

DISCRETE MATHEMATICAL STRUCTURES

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Answer the following:

   (a) State Pigeonhole Principle.
   (b) What are the applications of Inclusion and Exclusion.
   (c) Prove that the maximum number of edges in a simple graph with n vertices is n(n-1)/2
   (d) Show that the function $f(x)$=k, where k is a constant, is primitive recursive.

2. Compare and contrast the differences between mathematical logic and computational logic.

3. Explain the resolutions technique in predicate logic.

4. Draw the Venn diagram for the following

   (i) $(A \cap B) \cup (A \cap C) = A \cap (B \cup C)$
   (ii) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

5. Show that the following are equivalent formulas:

   (i) $P(A \cap B) \cup (A \cap C) = A \cap (B \cup C)$

   (II) $P \vee (\neg P \wedge Q) \Leftrightarrow P \vee Q$

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

DISCRETE MATHEMATICAL STRUCTURES

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. If A={1,2,……..n},show that any function from A to A which is one-one must also be onto and conversely.
2. Write short notes on the following :
a) Graph coloring
b) Spanning Trees
c) Applications of trees
d) Growth functions
3. Find the recurrence relation with initial condition for the following:
   a) 2,10,50,250,……….
   b) 1,1,3,5,8,13,21,………..
4. Determine the generating function of the following numeric function :

   a_n = 2^n if n is even

      = - 2^n if n is odd
5. State and prove De Morgan's Law for logic.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

COMPUTER ORANIZATION

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Draw and explain different functional units of a computer.
2. What are addressing modes? Explain various addressing modes with examples.
3. Draw the design of the control unit and explain.
4. Discuss in detail about error detecting codes.
5. Explain about computer arithmetic operations with one example.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

COMPUTER ORANIZATION

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. Define a bus, list and explain the type of bus.
2. Write about logic and shift micro-operations.
3. Describe the logical micro-operations with example.
4. What is control memory? Explain with address sequences.
5. Illustrate binary addition and subtraction with an example.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

PROBLEM SOLVING AND PROGRAMMING USING 'C'

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. What are the various built-in data types in 'C'? Discuss with examples.
2. Explain the differences between call by reference and call by name with suitable examples.
3. Explain array of structure and structure within a structure with examples.
4. What is a pointer? How the pointer variable is declared and initialized? Give suitable examples.
5. What is dynamic memory allocation? Write and explain different dynamic memory allocation function in 'C'.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

PROBLEM SOLVING AND PROGRAMMING USING 'C'

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. Compare recursion with iteration. Also write a recursive program to find GCD of two numbers.
2. Explain different types of loops in 'C' with syntax and examples.
3. How the structure variable is passed as a parameter to a function? Explain with example.
4. Write a 'C' program to read and display a text from the file.
5. Write a 'C' program to read n unsorted numbers to an array of site n and pass the address of this array to a function to sort the number in ascending order using bubble sort technique.

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. State and prove Bayes' theorem.

2. A random variable has the $c.d.f : F(x) = \begin{cases} 0 & : x < 0 \\ 1 - e^{-x/000} & x \geq 0 \end{cases}$ find the

   (i) $P(100 \leq X \leq 200)$ and

   (ii) $P(X \leq 300)$

3. From vessel containing 3 white and 5 black balls, 4 balls are transferred into an empty vessel. From this vessel a ball is drawn and is found to be white. What is the probability that out of four balls transferred 3 are white and 1 is black.

4. A sample of 400 items is taken from a population whose standard deviation is 10. The mean of the sample is 40. Test whether the sample has come from a population with mean 38. Also calculate 95% confidence interval for the proportion.

5. Calculate the coeffieient of correlation for the following data:

   X: 23 27 28 28 29 30 31 33 35 36

   Y: 18 20 22 27 21 29 27 29 28 29

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

PROBABILITY STATISTICS AND QUEUING THEORY

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. If a random variable X follows a normal distribution such that $P(9.6 \leq X \leq 13.8) = 0.70008$ and $P(X \geq 9.6) = 0.8159$. Find the mean and variance of the distribution.

2. Briefly explain about t- test, F- test and x^2 -tests.

3. In a hospital 480 female and 520 male babies were born in a week. Do these figure confirm the hypothesis that makes and females are born in equal number

4. If for a period of 2 h in a day (8— 10 am) trains, arrive at the yard every 20 mm, but the service time continues to remain 36 mm and then calculate average queue length on the assumption that the time capacity of the yard is limited to 4 trains only.

5. Explain the analysis of M/M/1 queuing system.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

MANAGEMENT ACCOUNTANCY

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Answer any THREE of the following. -
   (a) Journal
   (b) Cash Book
   (c) Working Capital Cycle
   (d) Debt- Equity ratio
   (e) Master Files and Transaction Files.

2. Describe the nature and scope of Accounting. Who are the users of accounting information?

3. Enter the following transactions in the cash book of Ramana with discount and cash columns.
   July
   1st   Started Business with Rs.10,000
   2nd   Paid into bank Rs.5,000
   6th   Received RaG,000 from Kiran allowed discount Rs.20
   9th   Paid Santha Rs.2,000 from was allowed discount Rs.10
   12th   Received Rs.1, 180 from Rishipal in settlement of Msdebt Rs.1,200
   14th   Paid Subhod Rs.890 in full settlement ofaccount Rs:900–
   21st   Paid Salaries Rs.300; Wages Rs.500; Rent Rs,200
   24th   Paid Chateñee Rs.880 and was allowed discount Rs.10
   26th   Purchased furniture from Ramvilascompany for cash Rs.800

29th   Received Rs.3,480 from Mukherjee and allowed discount Rs.30.

4. From the following balances as on 31st March,2014, prepare Trading and Profit and Loss accountand Balance Sheet.

Particulars	Rs.	Particulars	Rs.
Capital account	10.000	Returns outward	500
Plant and Machinery	4,000	Rent	400
Sundry debtors	2,400	Sales	16,400
Sundry creditors	1,200	Manufacturing expenses	800
Drawings	1,200	Trade expenses	700
Purchases	10,500	Bad debts	200
Wages	5,000	Carriage	150
Bank	1,000	Bills payable	700
Repahs	50	Returns inward	400

Closing stock (31St March, 2014) was valued atRs.1,450.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

MANAGEMENT ACCOUNTANCY

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. What are the basic books of accounts of a sole proprietary concern? Explain them briefly.

2. Explain the classification of ratios with examples. What do they interpret?

3. What is a "Find Flow Statement"? How as it prepared? What are the various source and uses of funds..

4. Define costing and discuss the nature, importance and basic principles of costing.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

SYSTEMS PROGRAMMING

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. What is the difference between BALR and USING instructions? What happens each at assembly time and at execution time.
2. Explain in detail about the one pass assembler with required data structures and algorithm.
3. Describe various data structures are needed to designing of two pass macro processor.
4. Describe different phases of compiler.
5. What is meant by text editor? Briefly explain various types of editors.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

SYSTEMS PROGRAMMING

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. Describe different types of instruction formats and its size.
2. Briefly explain about various types of macros.
3. Describe the conditional macro expansion with example.
4. What is an overlay? Explain overlay structured program and its execution.
5. Describe the functions and capabilities of an interactive debugging system.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

DATA STRUCTURES

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Explain the concept of multi dimensional arrays with suitable example.
2. What is Stack? Write an algorithm for PVSH and POP operations.
3. What is the different type of linked lists? Explain.
4. Write the algorithm for binary search. Explain with example.
5. Explain Prim's algorithm.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

DATA STRUCTURES

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. What is data structure? Explain the operations of various data structures in brief.
2. What is Pre-order, post-order and in order? Write their significance.
3. Write an algorithm for insertion of an element into a linked list.
4. What is the difference between linear and binary search? Explain with suitable examples.
5. Explain Quick Sort algorithm with an example.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

PRINCIPLE OF PROGRAMMING LANGUAGES

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Discuss feature of programming language and its importance.
2. Distinguish between data types – arrays and records.
3. What is call-by-value and call-by-reference? Give example.
4. Describe interpreted functions and macros with reference to LISP implementation.
5. Shared variables and shared data and the access mechanisms in Ada.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

PRINCIPLE OF PROGRAMMING LANGUAGES

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.
1. Explain the BNF rules for statements using the pascal syntax.
2. Describe various approaches to evaluate the expressions.
3. Explain concurrency mechanism in Ada.
4. Illustrate with suitable example cuts in prolog.
5. Write short note on exception handling mechanism.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

OBJECT ORIENTED PROGRAMMING

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Explain the different characteristics of object oriented programming.
2. What are the advantages of having call-by-reference over the class by value? Write a program to interchange two float values using call-by-reference.
3. What are the friend functions? Why are they used? Explain with an example.
4. What is inheritance? What are the different types of inheritance? Explain how the multiple inheritances are implemented in C++ with example.
5. What is a virtual function? Illustrate with an example the usage of virtual functions.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

OBJECT ORIENTED PROGRAMMING

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. Define a class and an object. Explain about accessing member function with an example.
2. With an example, explain different access specifiers of a class in C++.
3. Write a C++ program to overload the post and pre increment '++' operator using friend function.
4. What are I/O stream in C++? Give the stream class hierarchy.
5. What is meant by generic function? Write C++ program to create template function for array of integers and double using bubble sort.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

INFORMATION SYSTEM AND ORGANIZATIONAL BEHAVIOUR

ASSIGNMENT-1

Marks 20

Answer All questions. All question carry equal marks.

1. Discuss the nature and scope of organizational behaviour in the field of management.
2. What are the various kinds of intra-individual conflicts? Explain them in detail.
3. Discuss the need for managerial control and explain various kinds of control. Explain when controlling can be made effective.
4. What are the processing functions of information system? Discuss.
5. Discuss the process of managing various information resources to different application area in an organization.

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ASSIGNMENT QUESTION PAPER

MCA (First Year)

INFORMATION SYSTEM AND ORGANIZATIONAL BEHAVIOUR

ASSIGNMENT-2

Marks 20

Answer All questions. All question carry equal marks.

1. What is organizational conflict? How to manage them? Explain.
2. What are the objectives of management information system?
3. What are the various stages of group formation?
4. Define leadership. Explain the characteristics for leader.
5. Describe about the physical components of an information system.