D–1557	Sub. Code
	31511

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2023.

First Semester

DIGITAL COMPUTER ORGANIZATION

(CBCS 2018/2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions

1. Convert $(736.4)_8$ to decimal number.

2. State the associative property of Boolean algebra.

3. Define the term Combinational circuit.

4. What is counter? Give an example.

5. Define the term register and give an example.

6. What is the difference between direct and indirect address instruction?

7. Mention the types of peripherals.

8. Compare Synchronous and Asynchronous transfers.

9. What is main memory?

10. Write the uses of cache memory.

PART B — (5 × 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b).

11. (a) Write short notes on ASCII and Excess 3 codes.

Or

(b) Describe briefly about Quine Mc-Kluskey method.

12. (a) Draw the gate circuit of RS flip flop and obtain its truth table

Or

(b) Brief on half subtractors with its circuit diagram.

13. (a) Write short notes on interrupts.

Or

(b) Brief on the design of Accumulator.

14. (a) Describe the organization of general registers.

Or

(b) Discuss about serial communication.

15. (a) Discuss about Associative memory.

Or

(b) Write short notes on memory management hardware.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the conversion of binary to decimal and hexadecimal to binary with example.

17. Discuss about Multiplexer and Demultiplexer.

18. Explain memory reference instructions.

19. Discuss in detail about various addressing modes.

20. Explain how virtual address can be mapped to physical address.

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D–1558

Sub. Code
31512

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2023.

First Semester

OBJECT ORIENTED PROGRAMMING AND C++

(CBCS 2018 – 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Define the term data encapsulation.

2. Draw the I/O stream hierarchy in C++.

3. What is the use of copy constructor?

4. Write the general form of a class declaration.

5. Define pure virtual function.

6. Write the syntax to declare a derived class.

7. Draw the hierarchy of stream classes for file operations.

8. Define the term class template.

9. What are the advantages of using exception handling?

10. List out any four common exceptions.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

11. (a) Explain the evolution of object oriented languages.

Or

(b) Illustrate the creation and use of user – defined manipulators.

12. (a) Write a C++ program to calculate the roots of a quadratic equations by initializing the object using default constructor.

Or

(b) Explain the concept of inline function with suitable program.

13. (a) Illustrate hybrid inheritance with the help of suitable example.

Or

(b) How to convert between objects and basic types? Explain with examples.

14. (a) With an example, explain the following functions for manipulating file pointers:

seekg(), seekp(), tellg(), tellp()

Or

(b) Discuss on function template with an example program.

15. (a) Write short notes on throwing mechanism.

Or

(b) How to handle exceptions in class templates? Explain with examples.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Explain various formatted console I/O operations with suitable examples.

17. Explain the following with suitable examples:

    (a) Array of pointers

    (b) Friend function

18. What is the use of operator overloading? Write a program to overload post and pre increment operators.

19. How to inherit from template class? Explain with suitable example program.

20. Explain how to handle uncaught exceptions with appropriate example.

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D–1559	Sub. Code
	31513

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2023.

First Semester

DATA STRUCTURE AND ALGORITHMS

(CBCS 2018 – 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Distinguish between linear and non-linear data structures.

2. List out the application of Array.

3. How do you test for empty condition of a queue?

4. What are the operations performed on Stack?

5. Define the term completely binary tree.

6. Draw the tree for the expression (a+b/c)+((d*e-f)/g).

7. Define the term interval search.

8. What is the time complexity of Binary search?

9. When Bubble sort algorithm stops?

10. Which sorting algorithm is best if the list is already sorted? Why?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write short notes on primitive data types.

Or

(b) Explain in detail about space complexity of an algorithm.

12. (a) Briefly explain about header linked list.

Or

(b) Write down the algorithm to convert an expression from infix to reverse polish notation. Illustrate the steps for the following expression: (A+B)*D) ↑ (E+D.)

13. (a) Explain the different representations of Binary tree.

Or

(b) Construct the binary search tree using the following elements: 13,8,24,14,9,6,10. Illustrate preorder, inorder and postorder traversal for the same.

14. (a) Write the linear search algorithm. Calculate the time complexity of the linear search algorithm.

Or

(b) How linear search works? Explain with an example.

15. (a) Discuss in detail about tree sort method with an example.

Or

(b) Sort the following data using selection sort: 45 32 50 12 24 5 10

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What do you mean by Array? Explain in detail about multi-dimensional Array.

17. Describe the various operations on doubly linked list with examples.

18. Classify the Hashing functions and explain each with an example.

19. Write the algorithm for binary search. Validate the algorithm with a suitable data set.

20. Explain the following with suitable examples:(a)Radix sort (b) Insertion sort.

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D–1560

Sub. Code
31521

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2023.

Second Semester

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Define the term Software Engineering.

2. Write down the measures, metrics and indicators of software process.

3. What are the various tasks in Requirement Engineering?

4. What is Data modelling?

5. What is software prototyping?

6. What are the golden rules of User Interface Design?

7. What is Integration testing?

8. What is meant by source code metric?

9. How risks are identified?

10. Write a note on ISO 9000 quality standards.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

11. (a) Discuss on Capability Maturity Model Integration.

Or

(b) List the task regions in spiral model.

12. (a) List down the steps for validating requirements.

Or

(b) Explain the objectives of Flow based modelling.

13. (a) Discuss on Design issues and concepts.

Or

(b) How will you create a behavioural model? Explain.

14. (a) State the art of debugging.

Or

(b) Explain the difference between Black box and White box testing.

15. (a) Explain the different stages of Risk identification.

Or

(b) Explain the statistical software quality assurance concept.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the Waterfall model with neat sketch.

17. Explain the activities of Requirement engineering.

18. Describe Data design activities.

19. Explain the following testing techniques:

    (a) Validation testing

    (b) System testing

20. Discuss on Software Quality concepts and Quality Assurance measures.

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D–1561	Sub. Code
	31522

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2023.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS 2018 / 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Write the levels of data abstraction.

2. What is the purpose of storage manager?

3. Define the term primary key.

4. Write the general form of SQL query for create a table.

5. What is meant by trigger?

6. What are the problems caused by redundancy?

7. When is the meaning of rolled back transaction?

8. What are the types of serializability?

9. Define the term Access Time.

10. What is hashing?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL the questions choosing either (a) or (b).

11. (a) Discuss the types of Data Models.

Or

(b) Describe the role of Database administrator.

12. (a) Write short notes on integrity constraints over relations.

Or

(b) Describe briefly about tuple relational calculus.

13. (a) Write short notes on aggregate operators, giving examples.

Or

(b) Give a brief account on BCNF.

14. (a) Discuss about Timestamp based protocols.

Or

(b) Describe various recovery techniques during transaction.

15. (a) Discuss on clustered indexing.

Or

(b) Write about B+ tree.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Construct an ER model for hospital management system.

17. Explain selection, projection and set operations giving examples.

18. What is normalization? Explain all the Normal forms.

19. What is concurrency control? How it is implemented in DBMS?

20. Explain in detail about various file organizations.

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D–1562

Sub. Code
31523

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2023.

Second Semester

COMPUTER GRAPHICS

(CBCS 2018 – 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. What is the importance of computer graphics?

2. What is a video display device in computer graphics?

3. What is clipping in computer graphics?

4. Define the term shear.

5. What is quadratic surface in computer graphics?

6. What is the difference between hermite and Bezier curves?

7. How 3D reflection differs from 2D reflection?

8. Why viewing transformation is important in computer graphics?

9. What is depth sorting in computer graphics?

10. What is meant by key frame?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL the questions, choosing either (a) or (b).

11. (a) List out the applications of computer graphics.

Or

(b) With a neat diagram, discuss about raster scan systems.

12. (a) Write short notes on translation operation with a neat diagram.

Or

(b) Explain about composite transformation with an example.

13. (a) Discuss briefly about parametric splines with a neat diagram.

Or

(b) Elaborate on constant intensity shading rendering method in computer graphics.

14. (a) Discuss briefly about 3D rotation operation with an example.

Or

(b) Writ short notes on perspective projection with an example.

15. (a) Discuss briefly about depth buffer method with a neat diagram.

Or

(b) Elaborate on animation languages in computer graphics.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the working mechanism of cathode ray tube device with a neat sketch.

17. Discuss in detail about Cohen- Sutherland line clipping algorithm.

18. List out the properties of Bezier curves.

19. What is reflection in 3D transformation? Explain in detail about its types with necessary diagrams.

20. Discuss briefly about BSP tree with a neat sketch.

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D–1563

Sub. Code
31531/34031

DISTANCE EDUCATION

M.C.A/M.C.A(Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Third Semester

DISCRETE MATHEMATICS

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. State the truth table of "if tigers have wings then the earth travels round the sun"

2. Show that $A \cap B = B \cap A$.

3. Let $X = \{1,2,3,4\}$ and $R = \{(x,y)/x > y\}$. Draw the graph of R.

4. Define Poset.

5. Define many–one function.

6. Let $f : R \to R$ defined by $f(x) = x^2 - 2$, find f^{-1}.

7. Define abelian group.

8. Give an example of a semi group.

9. What is meant by adjacency matrix of a graph?

10. If A and B are independent events with *P(A)* = 0.4 and *P(B)* 0.5 Find *P(AUB).*

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

11. (a) Obtain the disjunctive normal form of $7(PVQ) \leftrightarrow P \wedge Q$.

Or

(b) Show that $(x)(P(x) \to Q(x)) \wedge (x)(Q(x) \to R(x)) \Rightarrow (x)(P(x) \to R(x))$

12. (a) Draw the directed graphs representing each of the relations from

(i) $\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}$ (ii) $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 1 & 0 \\ 0 & 1 & 0 \end{bmatrix}$

Or

(b) If R and S be relations on a set A represented by the matrices

$$M_R = \begin{pmatrix} 0 & 1 & 0 \\ 1 & 1 & 1 \\ 1 & 0 & 0 \end{pmatrix} \text{ and } M_S = \begin{pmatrix} 0 & 1 & 0 \\ 0 & 1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$$

Find the matrices that represent $R \cup S, R \cap S, R \circ S, R \oplus S$.

13. (a) Show the function $f(x, y) = x + y$ is primitive recursive.

Or

(b) Give an example of the following functions.

(i) One – one (ii) On-to (iii) in-to (iv) Bijective

14. (a) Prove that for any commutative monoid *(M,*)* the set of idempotent elements of M forms a submonoid.

Or

(b) Prove that every group of prime order is cyclic.

15. (a) Show that the maximum number of edges in a single graph with n vertices is $\frac{n(n-1)}{2}$.

Or

(b) A is known to hit the target in 2 out of 5 shots whereas B is known to hit the target in 3 out of 4 shots. Find the probability of the target being hit when they both try?

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. In a survey of 100 students, it was found that 40 studied Mathematics, 64 studied Physics, 35 studied Chemistry, 1 studied all the three subjects, 25 Mathematics and Physics, 3 studied Mathematics and Chemistry and 20 studied Physics and Chemistry. Find the number of students who studied Chemistry only and the number who studied none of these subjects.

17. Let $X = \{1,2,3.....7\}$ and $R = \{(x,y)/x-y \text{ is divisible by } 3\}$, show that R is an equivalence relation. Draw the graph of R.

18. Prove that the inverse of an invertible function is invertiable.

19. State and prove Lagrange's theorem.

20. Prove that a simple graph with n-vertices and k-components can have atmost $\frac{(n-k)(n-k+1)}{2}$ edges.

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D–1564	Sub. Code
	31532/34032

DISTANCE EDUCATION

M.C.A./M.C.A.(Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Third Semester

OPERATING SYSTEM

(CBCS 2018 – 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term OS.

2. What do you mean by system call?

3. What is IPC?

4. Mention the benefits of Multiprocessor scheduling.

5. What is semaphore?

6. How deadlocks are detected?

7. What is swapping?

8. Differentiate between paging and segmenting.

9. List out various File access methods.

10. What are called secondary storage devices?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the structure of OS.

Or

(b) List and explain the various services of OS.

12. (a) Explain the various operations on processes.

Or

(b) Explain Round Robin scheduling algorithm with an example.

13. (a) What are the requirements that satisfy critical section problem?

Or

(b) Explain the algorithm for deadlock prevention.

14. (a) Compare and contrast internal and external fragmentation.

Or

(b) Explain the Optimal Page Replacement algorithm.

15. (a) Write about File sharing and protection mechanism.

Or

(b) What is Disk scheduling? Explain.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain about Operating System design and Implementation.

17. Explain the various process states with neat sketch.

18. Describe any one of the deadlock avoidance algorithms.

19. Explain contiguous memory allocation method and its drawbacks.

20. Elaborate on Directory Implementation methods.

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D–1565

Sub. Code
31533/34033

DISTANCE EDUCATION

M.C.A./M.C.A.(Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Third Semester

OBJECT ORIENTED ANALYSIS AND DESIGN

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the main advantage of object-oriented development?

2. How is software verification different from validation?

3. Name the models in Objectory.

4. Why do we need to model a problem?

5. What is the 80-20 rule?

6. How would you name classes?

7. What is coupling?

8. How can metaphors be used in the design of a user interface?

9. What is a test plan?

10. Define foundation class libraries.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write about the components of unified approach.

Or

(b) Why is polymorphism useful? Explain.

12. (a) Compare patterns and frameworks.

Or

(b) Describe the class diagram.

13. (a) Write the guidelines for developing effective documentation.

Or

(b) Give a note on common class patterns approach.

14. (a) Write the activities of the object-oriented design process.

Or

(b) Describe the process of creating the access layer classes.

15. (a) Describe the different testing strategies.

Or

(b) What are metrics? Explain.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain about relationship among classes.

17. Give a detailed note on Booch system development process.

18. Briefly describe about identifying object relationship attributes and methods.

19. Explain the macro and micro processes of view layer design.

20. Explain client/server computing.

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D–1566

Sub. Code
31541/34041

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Fourth Semester

ACCOUNTING AND FINANCIAL MANAGEMENT

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define accounting.

2. State the significance of 'turnover ratios'.

3. List out the functions of management accounting.

4. What is standard costing system?

5. State any four advantages of budgetary control.

6. What is Break-even Chart?

7. What is scope of financial management?

8. State the significance of working capital.

9. What is cost of capital?

10. What is residual dividend policy?

PART B — (5 × 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b).

11. (a) From the following information, prepare the Trial Balance of MS. Handicraft for the year ended on 31st March 2019.

Particulars	Rs.	Particulars	Rs.
Bill Payable	5,000	Rent	15,000
Outstanding Salaries	5,000	Prepaid Rent	4,000
Owner's Capital	90,000	Machinery	40,000
Bank Loan	25,000	Sundry Debtors	15,000
Marketable Security	20,000	Insurance charges	15,000
Depreciation – Equipment	3,000	Sundry Creditors	12,000
Drawings	2,000	Equipment	20,000
Maintenance Expenses	3,000	Accrued Expenses	1,000
Miscellaneous Expenses	2,000	Sales	42,250
Taxes	11,250	Purchases	30,000

Or

(b) Explain any five accounting concepts.

12. (a) Explain the managerial uses of management accounting.

Or

(b) From the following information, find out P/V Ratio and Margin of Safety.

Sales	Rs. 10,00,000
Variable Cost	Rs. 4,00,000
Fixed Cost	Rs. 4,00,000

13. (a) Calculate Labour Variances from the following data:

Gross direct wages	Rs. 36,000
Standard hours produced	2,000 hrs
Standard rate per hour	Rs. 15

Actual hours paid – 1,800 hours out of which hours not worked (abnormal idle time) are 50 hours.

Or

(b) What is budgetary control? What are its objectives?

14. (a) The initial cash outlay of a project is Rs. 1,00,000 and it generates cash inflows of Rs. 40,000, Rs. 30,000 Rs. 50,000 and Rs. 20,000 at10% rate of discount. Calculate Profitability Index.

Years	1	2	3	4
Discount factors at 10%	0.909	0.826	0.751	0.683

Or

(b) Explain the various sources of working capital.

15. (a) What are the advantages of issuing bonus shares?

Or

(b) What are the different types of dividends?

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. The following balances were extracted from the books of Thomas & Co. as on 31st March 2018.

Particulars	Debit (Rs.)	Credit (Rs.)
Purchases and Sales	75,000	1,20,000
Returns inward and Outward	2,000	1,000
Opening Stock	10,000	
Freight inwards	4,000	
Wages	2,000	
Investments	10,000	
Bank Charges	1,000	
Land	30,000	
Machinery	30,000	
Building	25,000	
Creditors		30,000
Cash at bank	18,000	
Cash in hand	4,000	
Capital		60,000
	2,11,000	2,11,000

Additional information:

- Closing stock Rs. 9,000
- Provide depreciation @ 10% on machinery
- Interest accrued on investment Rs. 2,000

Prepare Trading account, Profit and Loss Account and Balance Sheet.

17. Prepare a Cost Sheet showing Cost and Profit from the following information showing clearly

(a) Material consumed

(b) Prime cost

(c) Works cost

(d) Cost of Production

(e) Cost of Sales

(f) Profit and

(g) Sales:

	Rs.
Materials purchased	2,00,000
Wages	1,00,000
Direct expenses	20,000
Opening stock of materials	40,000
Closing stock of materials	60,000

Factory overhead is absorbed at 20% on wages. Administrative overhead is 25% on works cost. Selling and distribution overheads are 20% on the cost of production and Profit is 20% on sales.

18. The expenses budgeted for production of 10,000 units in a factory are furnished below:

	Per unit Rs.
Materials	70
Labour	25
Variable overhead	20
Fixed overhead (Rs. 1,00,000)	10
Variable expenses (Direct)	5
Selling expenses (10% fixed)	13
Distribution expenses (20% fixed)	7
Administration expenses (Rs. 50,000 fixed for all levels)	5
Total Cost pr unit (to make and sell)	155

Prepare a Flexible Budget for the production of

(a) 8,000 units

(b) 6,000 units.

19. Briefly explain the scope and functions of financial management.

20. Describe the theories of Net Income and Net Operating Income approach in capital structure.

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D–1567

Sub. Code
31542/34042

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2023.

Fourth Semester

COMMUNICATION SKILL

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define Communication.

2. Write an example for extra personal communication.

3. Distinguish between soft Skills and Hard skills.

4. How do you introduce yourself while Telephone Conversation?

5. How do you analyze the audience before your presentation?

6. What do you mean Proximics?

7. Write note on the purpose of Group Discussion.

8. How do you start writing official meetings notice?

9. Find the difference between resume and Curriculum Vitae.

10. How do you improve English Language writing?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) What makes communication important?

Or

(b) Discuss the barriers to communication.

12. (a) Write down the special features of verbal and Non- verbal communication.

Or

(b) List out the Do's and Don't while telephone conversation.

13. (a) What is presentation? What are the various tips for powerful presentation?

Or

(b) How do you prepare yourself before your presentation in a meeting?

14. (a) Why Group discussion is important? And what are the different types of GD?

Or

(b) What are the different types of interviews? Mention the etiquette and manners one should adhere during the interviews.

15. (a) How do you develop creative writing skills?

Or

(b) What are the symbols and signs are called the mail magic?

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Write an essay on various levels of communication.

17. What are the soft Skills? Mention the important of Soft Skills? How do you sell your Soft Skills?

18. How Audio – Visual aids helpful for the effective presentation?

19. What are the areas to be concentrated while preparing for a GD? Mention Non- verbal Communication in GD.

20. Find the distinction between Minutes and Memos. How do you writing up the minutes for the official meeting?

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D–1568

Sub. Code
31543/34043

DISTANCE EDUCATION

M.C.A./M.C.A.(Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Fourth Semester

INTERNET AND JAVA PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List out the names of any four web browsers.

2. Define the term IRC.

3. List the various applications of OOP.

4. Write a Java program to find the sum of two numbers.

5. What is an object? Give an example.

6. What is the difference between Array and vector?

7. How will you include an applet in an HTML file?

8. What is synchronization and why it is important?

9. What are output streams and input streams in Java?

10. What are the various operations performed on file?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short notes on File Transfer Protocol.

Or

(b) Write short notes on Telnet.

12. (a) Explain the concept of tokens in Java.

Or

(b) Discuss on various operators in Java.

13. (a) Write a Java program to read the ages of all members of a family, store them in one-dimensional array and display the age of the eldest and the youngest persons.

Or

(b) What is an interface? Write a Java program to illustrate the use of an interface. Give self explanatory comments in your program.

14. (a) Write a Java program to draw a human face using graphics functions.

Or

(b) How to implement runnable interface? Explain with suitable example.

15. (a) Explain the various character stream I/O classes in Java.

Or

(b) Write a Java program for writing bytes in a file.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about the following:

(a) Domain Name system (b) E-mail

17. Discuss on various features of Java.

18. Write a Java program to read a matrix of number and find the biggest and smallest values and interchange their position.

19. How are exceptions handled in Java? Elaborate with suitable examples.

20. Write a Java program to read the lines from console until the input line contains "good bye". Display those lines which contain the word "India" or "Hello". Also count the number of those lines.

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D–1569

Sub. Code
31551/34051

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Fifth Semester

COMPUTER NETWORKS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Write any two applications of Computer networks.

2. What are the functions of OSI layers?

3. What is CSMA/CD?

4. What is called selective repeat?

5. What is meant by message switching?

6. Define flooding.

7. What is UDP?

8. What is the function of SNMP?

9. Define: cryptography.

10. Differentiate: Private key and public key.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short notes on computer software.

Or

(b) Discuss about Analog and Digital signal performances.

12. (a) What is Block coding? Explain the purpose of it.

Or

(b) Explain Sliding window protocol.

13. (a) Compare Circuit switching and Packet switching.

Or

(b) Explain about Flow based routing.

14. (a) Explain the steps of process to process delivery in transport layer.

Or

(b) Discuss on DNS.

15. (a) Explain Transposition cipher with an example.

Or

(b) Write short notes on Asymmetric key cryptography.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the various layers of OSI reference model with neat sketch.

17. Explain Error detection and correction codes.

18. Explain the following routing algorithms:
    (a) Distance vector routing
    (b) Link state routing

19. Explain about Remote Logon and File Transfer services.

20. Explain DES algorithm with an example.

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D–1570

Sub. Code
31552/34052

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
MAY 2023.

Fifth Semester

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define OLAP

2. What is meant by data reduction in data mining?

3. What is meant by patterns in data mining?

4. What is called association rule? Give an example.

5. Define the term CLARANS and CACTUS.

6. What are the advantages of machine learning?

7. Write any four scientific tool names.

8. What is meant by web usage mining?

9. Expand the term VVV in big data.

10. What is Hadoop?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the components of data warehousing.

Or

(b) Explain the importance of data reduction in data mining? Explain.

12. (a) Describe about Decision tree classification.

Or

(b) Explain about Backpropagation. How it is used for classification?

13. (a) Describe about the categorical clustering algorithms.

Or

(b) Write short notes on unsupervised learning algorithms.

14. (a) Write short notes on Spatial data structure.

Or

(b) Explain about the features of weka tool.

15. (a) Write short notes on types of data sources in big data.

Or

(b) Explain about Hadoop Eco system.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about data warehouse architecture with proper diagram.

17. Explain about Apriori algorithm in step by step with suitable example.

18. Explain in K means cluster algorithm in step by step with suitable example.

19. Discuss about emphasis of Text mining.

20. Explain about the importance of big data analytics? Discuss about traditional versus Big data approach.

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D–1571

Sub. Code
31553/34053

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2023.

Fifth Semester

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the purpose of work area in visual studio?

2. Name the windows of visual studio.

3. What do you mean by code skeleton?

4. Why do we use namespace in VB.NET?

5. What is the default namespace?

6. What is CLR?

7. State the use of Breakpoint in debugging.

8. State the use of call stack window in debugging.

9. Named any two layouts used in desktop application.

10. Name any two properties of Data Grid and their purpose.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the tools in the Visual Studio toolbars.

Or

(b) Explain the features of windows project.

12. (a) Describe branching statements in VB.NET.

Or

(b) Explain briefly about class inheritance in C#.NET.

13. (a) Explain the terms events and delegates.

Or

(b) Explain the terms arrays and generics.

14. (a) How do you create database and connect to VB.NET? Explain briefly.

Or

(b) Explain the use of locals, autos and watch windows.

15. (a) What is event handling in C#? Explain with an example.

Or

(b) Write short notes on the creation of Web Application.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about different types of projects that can be created with visual studio.

17. Write a VB.Net program to input and display your name and address. Write steps to perform edit, compile and execute operations.

18. Explain in detail about class designer and code generation.

19. How to debug your code in Visual studio? Illustrate with examples.

20. List and explain the use of WPF controls.

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D–1572	Sub. Code
	31561/34061

DISTANCE EDUCATION

M.C.A/M.C.A (Lateral Entry) DEGREE EXAMINATION, MAY 2023.

Sixth Semester

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. List the Pros and Cons of Cloud Computing?

2. What are the Cloud Service Models?

3. What is the purpose of Cloud Contact Lists?

4. How to collaborate on Group Projects?

5. What is the purpose of Contact Management in Cloud?

6. How the Online File Sharing done in Google Cloud?

7. Define Software-As-A- Service.

8. What do you mean by Google App Engine?

9. List down various Open Source Cloud Platforms.

10. What is the Purpose of Hypervisor Management Software?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the Pros and Cons of Cloud Computing paradigm.

Or

(b) Classify the various Cloud Computing deployment Models with neat Sketch.

12. (a) Elucidate the procedure of Centralizing Email Communications in Cloud.

Or

(b) Write Short notes on Collaborating on Schedules.

13. (a) Elucidate the Project Management in Cloud Computing.

Or

(b) Describe in detail about Word Processing and Database.

14. (a) Write short notes on Four levels of Federation.

Or

(b) Describe the Software – as – a – Service with suitable illustration.

15. (a) Describe in brief about the Eucalyptus for Cloud.

Or

(b) Describe the Way, how Nebula Open Source works in Cloud Governance.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about the Architecture of Cloud Computing with neat Sketch.

17. What are the various ways to Collaborating on Group Projects and Events? Explain in detail.

18. Describe in detail on the Storing and sharing of Files via Online with suitable example.

19. Explain in detail with proper illustration, the Windows Azure Platform for Cloud Implementation.

20. Recommend the Open Source Software Tools used in Cloud.

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D–1573

Sub. Code
31562/34062

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2023.

Sixth Semester

SOFT COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is hard computing?

2. Expand and write a note on the term ANN.

3. What do you mean by the term Associative memory?

4. What is ART network?

5. Define the term Fuzzy Set.

6. What do you mean by fuzzy relation?

7. What is fuzzy rule? Give an example.

8. What is extension principle?

9. What is meant by encoding in GA?

10. Name the operators of GA.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Specify the characteristics of soft computing.

Or

(b) Brief on Learning Process.

12. (a) Explain briefly about BAM.

Or

(b) What is ANN? Explain briefly.

13. (a) Compare and Contrast Crisp Set and Fuzzy Set.

Or

(b) What is Defuzzification? Illustrate with an example.

14. (a) Brief on Fuzzy propositions.

Or

(b) Explain rule aggregation through an example.

15. (a) Describe the elements of GA.

Or

(b) Brief on evolutionary computing

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the architecture of Neural Network.

17. Describe Hop field network.

18. Elaborate on membership functions and methods associated with them.

19. Explain in detail about fuzzy rules and different types of reasoning.

20. Explain in detail about cross over and mutation operators.

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D–1574

Sub. Code
31563/34063

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2023

Sixth Semester

BIG DATA ANALYTICS

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is Big Data? Mention the characteristics of Big data.

2. Explain any 4 technologies available for Big data.

3. What are the major components of Hadoop?

4. Explain Jacard distance with an example.

5. Mention some applications of Data stream mining.

6. Define the term Concept Drift.

7. What do you mean by Pagerank of a hyperlink? Explain its significance.

8. What are Recommendation systems?

9. Mention some applications of Social Network Analysis.

10. List out the different types of social networks with example for each.

PART B — (5 × 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b).

11. (a) Discuss on advantages of Big Data Analytics.

Or

(b) Write short notes on Hadoop eco system.

12. (a) Give the pseudo code for any four Map-reduce relational operations.

Or

(b) Discuss on Jaccard similarity of sets with an example.

13. (a) Discuss briefly on Decaying Windows.

Or

(b) Bring out the issues with respect to data stream query processing.

14. (a) Explain collaborative filtering. How is it different from Context based systems?

Or

(b) Discuss briefly on the techniques for combating link spams.

15. (a) What is Simrank? Explain how it can be implemented.

Or

(b) Discuss on the need for counting triangles in a social graph.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. With a neat sketch explain the architecture of Hadoop.

17. Give the Map-reduce algorithm for matrix multiplication.

18. Explain the problem of counting ones in a window.

19. Write short notes on the various methods for spamdexing.

20. Discuss on the methods for discovery of communities in a social graph.

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