D–5551	Sub. Code
	31511

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2022.

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 questions.

1. Convert 22.64_{10} to hexadecimal number.

2. What are called don't care conditions?

3. Write the truth table of half adder.

4. Define the term throughput.

5. Mention the phases of instruction cycle.

6. Write the memory reference instructions

7. What are peripherals?

8. What is stack organization?

9. Define the term bus.

10. Write the purpose of cache memory.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss the use of complements with example.

Or

(b) State and explain DeMorgan's theorem.

12. (a) Give a note on D and T flip flop.

Or

(b) Write about error detection codes.

13. (a) Explain the basic instruction types with example.

Or

(b) Write the steps taken when an interrupt occurs.

14. (a) Describe the general register organization.

Or

(b) With a neat sketch, explain IOP.

15. (a) Describe the need for secondary storage devices.

Or

(b) Write about memory management hardware.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Reduce the following boolean expression using K-map:

F (A, B, C, D) $= \sum$ (2,3, 4, 5, 6,7,8,10,11)

17. Explain Floating point representation with examples.

18. Discuss about the design of computer.

19. What do you mean by addressing modes? Explain various addressing modes.

20. Write a detailed notes on virtual memory.

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D–5552	Sub. Code
	31512

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2022.

First Semester

OBJECT ORIENTED PROGRAMMING AND C++

(CBCS 2018 – 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. What are input and output streams?

2. List any two I/O Manipulators and state their purpose.

3. Write a C++ code to swap two numbers using pointer?

4. Define the term private member function.

5. State the rules for operator overloading.

6. What are the characteristics of abstract class?

7. What is the main reason of using templates in C++?

8. What are the functions that the file stream class provides?

9. Mention any three exceptions with description.

10. Write the syntax of re-throwing exceptions.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Differentiate between procedure oriented and object oriented programming.

Or

(b) Explain various unformatted I/O operations.

12. (a) Write a C++ program to calculate the sum of given distances in meter and centimeter and display the results using friend function.

Or

(b) How to define a member function inside and outside the class? Explain with examples.

13. (a) Write short notes on pure virtual function. Give an example.

Or

(b) Write C++ program to add two complex numbers using overloaded "+" operator.

14. (a) Write a program to count number of occurrences of particular character in text file.

Or

(b) Write a C++ program to illustrate class template with multiple parameters.

15. (a) Write a C++ program for exceptions handling in constructors and destructors.

Or

(b) Explain how to handle exception in inheritance tree with appropriate example.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Describe in detail about the basic concepts of object oriented programming.

17. Explain various types of constructors with suitable example program.

18. Explain different types of inheritance with block diagram and example.

19. Explain the functions to perform open, close, read and write operation on files.

20. What are the various ways of handling exceptions? When do we use multi-catch handlers? Explain with an example.

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D–5553	Sub. Code
	31513

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2022.

First Semester

DATA STRUCTURE AND ALGORITHMS

(CBCS 2018 /2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What are the characteristics of an Array?

2. Define the term space complexity.

3. List the applications of stack.

4. What is the need for header file?

5. Define the term Binary Tree.

6. List out various techniques of hashing.

7. What is meant by searching?

8. Define the term binary search.

9. State the logic of Tree sort algorithm.

10. Compare quick sort and selection sort.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain two-dimensional array. How two dimensional arrays are represented in memory?

Or

(b) Write short notes on time complexity of an algorithm.

12. (a) Write an algorithm for inserting and deleting an element from linked list. Explain with examples.

Or

(b) Write short notes on circular queue. Compare it with linear queue.

13. (a) Write algorithms to perform insert and delete operations on binary tree and explain them with examples.

Or

(b) Explain the various tree traversals and predict a binary tree with preorder: ABCDEFGHI & Inorder: BCAEDGHFI.

14. (a) Explain the algorithm of Binary search. Illustrate with an example.

Or

(b) Consider the following elements in an Array:

11 10 9 7 6 3 2 1

Apply Binary search for element 11 and discuss each step.

15. (a) Sort the following data in ascending order using Bubble sort:

9,3,11,6,5,10,7

Or

(b) Write an algorithm to implement radix sort with suitable example.

PART C — ($3 \times 10 = 30$ marks)

16. Explain in detail about various types of data structure.

17. Write an algorithm for postfix expression, evaluate it and show the contents of stack for the following postfix expression:

623+-382/+*2$3+

18. Elaborate on various types of binary tree with suitable examples.

19. Derive the best, average, worst case time complexity of a linear search.

20. The initial content of an array is given as 25,57,48,37,12,92,86,33. Write and illustrate the quick sort algorithm to order the elements and explain its efficiency in sorting.

D–5554	Sub. Code
	31521

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2022.

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. What do you mean by process assessment?

3. List any two tasks of Requirement engineering.

4. What is class-based modelling?

5. What are the elements of design model?

6. What are the golden rules of user interface design?

7. Differentiate between unit testing and module testing?

8. What is regression testing?

9. What are called software risks?

10. What do you mean by formal technical review?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Differentiate between personal and team process models.

Or

(b) Explain the waterfall model of software life cycle.

12. (a) What is Requirement Engineering? Explain.

Or

(b) Explain flow oriented modelling technique.

13. (a) List the principles of Software design.

Or

(b) What is the need for architectural design? Explain.

14. (a) Compare and contrast: black box and white box testing.

Or

(b) Explain product and process metrics.

15. (a) Explain various software risks.

Or

(b) Discuss on ISO 9000 Quality standards.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain various Incremental software process models.

17. Explain the activities of Object oriented analysis model.

18. Describe various steps in Data design.

19. Explain the following testing strategies:

    (a) Validation testing

    (b) System testing

20. Discuss the stages of Software Quality Assurance.

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D–5555	Sub. Code
	31522

DISTANCE EDUCATION

MCA DEGREE EXAMINATION, MAY 2022.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEM

(CBCS 2018 – 2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Define the term database management system.

2. What is relationship set?

3. Why the join operation is given a special attention?

4. List the set operations.

5. What is meant by 'subquery'?

6. How are primary keys related to FDs?

7. What is a serializable scheule?

8. Define the term log.

9. What is the relationship between files and indexes?

10. Write the order of B+ tree.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe the levels of abstraction in a DBMS.

Or

(b) Explain entities, attributes and entity sets with examples.

12. (a) What are integrity constraints? How are these constraints expressed in SQL?

Or

(b) Describe the selection operation.

13. (a) Write and explain the form of a basic SQL query?

Or

(b) Give a brief account on minimal cover for a set of FDs.

14. (a) Discuss on serializable schedule.

Or

(b) How is the log used in transaction rollback and crash recovery?

15. (a) Compare the features of different file organizations?

Or

(b) Write about ISAM methods.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain database system structure with a neat sketch.

17. Relational algebra and relational calculus are said to be equivalent in expressive power. Explain what this means and how it is related to the notion of relational completeness?

18. What is normalization? Explain various normal forms.

19. Discuss about lock based protocols.

20. Explain about B+ trees.

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D–5556

Sub. Code
31523

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, MAY 2022.

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 questions

1. What are the elements of computer graphics?

2. List any two line drawing algorithms in computer graphics.

3. What do you mean by transformation?

4. What is 2D rotation?

5. What do you mean by polygon surface?

6. What for Bezier curves are used?

7. List down the type of 3D transformations?

8. What is meant by 3D rotation?

9. Write a note on the term visible surface detection.

10. Why do we use Z buffer?

PART B — ($5 \times 5 = 25$ marks)

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

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

Or

(b) What is boundary filling in OS? Illustrate the steps in the algorithm.

12. (a) How to translate a point from one coordinate position to another? Explain.

Or

(b) Discuss briefly about the 2D shearing transformation of object with necessary diagram.

13. (a) What is a curve? Explain its types.

Or

(b) List out the properties of B-Spline curves.

14. (a) Write short notes on 3D scaling.

Or

(b) What is parallel projection? Explain with its structure.

15. (a) Discuss briefly about depth sorting.

Or

(b) Write down the steps to perform insertion in octrees with example.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain with a neat structure the working principle of cathode ray tube.

17. What is composite transformation? Explain with its structure.

18. What is Gouraud shading? Explain with its structure.

19. Discuss in detail the following :

    (a) Oblique projection

    (b) Isometric projection.

20. Explain in detail about back face detection method with an example.

D–5557

Sub. Code
31531/34031

DISTANCE EDUCATION

M.C.A./M.C.A.(Lateral Entry) DEGREE EXAMINATION,
MAY 2022.

Third Semester

DISCRETE MATHEMATICS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Show that $\neg\neg P$ is equivalent to P.

2. Show that $A \subset B$ if and only if $A \cap B = A$.

3. Find the range of the relations S = $\left\{\left\langle x, x^2\right\rangle \middle| x \in \mathbb{N}\right\}$.

4. Define partial order relation with an example.

5. Write Peano's successor function.

6. Define binary operation.

7. Show that $\mathbb{N}$ is a semigroup under the operation $x * y = \max\{x, y\}$.

8. What is the order of the group S_n?

9. Define complete graph.

10. What is the sample space when a die and coin are tossed?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Obtain the principal disjunctive normal form of $\neg P \vee Q$.

Or

(b) Show that, for any two sets A and B, $A - (A \cap B) = A - B$.

12. (a) Let $X = \{1, 2, 3, 4\}$ and $R = \{\langle x, y \rangle \mid x > y\}$. Draw the graph of R and also give its matrix.

Or

(b) Let $\mathbb{Z}$ be the set of integers and let R = $\{\langle x, y \rangle \mid x \in \mathbb{Z} \wedge y \in \mathbb{Z} \wedge (x - y)$ is divisible by $3\}$ Determine the equivalence classes generated by elements of $\mathbb{Z}$.

13. (a) Show that there exists a one-to-one mapping from $A \times B$ to $B \times A$. Is it onto?

Or

(b) List all one-to-one functions from {1, 2, 3} to $\{a, b, c\}$.

14. (a) Describe dihedral group.

Or

(b) Prove that a non-empty subset S of a group $\langle G, * \rangle$ iff for any $a, b \in S, a * b^{-1} \in S$.

15. (a) Describe the Konigsberg Bridge problem.

Or

(b) Let X have the p.d.f. $f(x) = \begin{cases} \frac{x+1}{2} & \text{if } -1 \le x \le 1 \\ 0 & \text{otherwise} \end{cases}$.

Find the mean and standard deviation of X.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Prove that $(A \cap B) \times (C \cap D) = (A \times C) \cap (B \times D)$.

17. Draw Hasse diagram of $\langle \rho(A), \subseteq \rangle$, where $A = \{a, b, c, d\}$.

18. Show that the operations of union and intersection on $\rho(X)$ are both associate, commutative. Determine the zeros, and show that the operations distribute over each other.

19. Let $(G, *)$ be a finite cyclic group generated by an element $a \in G$. If $|G| = n$, then show that n is the least positive integer for which $a^n = e$ and $G = \{a, a^2, a^3, ..., a^n = e\}$.

20. (a) Prove that a tree with n vertices has $n-1$ edges.

(b) Prove that a graph G without loops is a tree if and only if any two distinct vertices are connected by a unique path.

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D–5558	Sub. Code
	31532/34032

DISTANCE EDUCATION

M.C.A./M.C.A. (LATERAL ENTRY) DEGREE EXAMINATION, MAY 2022.

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. What is an operating system? Give examples.

2. What is a trap? How it was generated?

3. What are the different types of process scheduling queues?

4. What is the best scheduling algorithm in OS?

5. What are the two functions that control critical section?

6. List out the different methods for handling deadlocks.

7. Why do we need swapping operation in OS?

8. What are the types of contiguous memory allocation?

9. What are the different types of files in OS?

10. What are the types of file sharing in OS?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain in brief about the category of layered operating system structure that maintains modularity and robustness.

Or

(b) What are the major operations of OS? Explain with its structure.

12. (a) How does a connection between two processes takes place with shared memory method? Explain with its structure.

Or

(b) What is load balancing in OS? Discuss its types.

13. (a) What are called monitors in OS? Explain with an example.

Or

(b) Explain with an example the ways to prevent deadlock.

14. (a) Discuss briefly about contiguous memory allocation with its structure.

Or

(b) What is paging? Briefly explain its working procedure.

15. (a) What is mounting in OS? Discuss about file system mounting.

Or

(b) Elaborate on the process of file sharing in OS.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. What are the important functions of OS? Explain each function in detail.

17. What are the different operations that can be performed on a process? Explain each operation with its structure.

18. Elaborate in detail about the solution to the critical section problem using hardware synchronization.

19. What do you mean by non-contiguous memory allocation? Explain with its structure.

20. Describe in detail about various file allocation methods.

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D–5559

Sub. Code
31533/34033

DISTANCE EDUCATION

M.C.A./M.C.A. (LATERAL ENTRY) DEGREE EXAMINATION, MAY 2022.

Third Semester

OBJECT ORIENTED ANALYSIS AND DESIGN

(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 system development methodology?
2. Why polymorphism is useful?
3. Name the models in objectory.
4. Write the importance of UML.
5. Who are the actors?
6. List any four approaches for identifying classes.
7. Define the term OCL.
8. What is concurrency control?
9. What is path testing?
10. Compare verification and validation.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write the advantages of object oriented development.

Or

(b) Describe object relationships and associations.

12. (a) Give a brief account on Booch methodology.

Or

(b) Describe the differences between patterns and frameworks.

13. (a) Describe the basic activities in object oriented analysis.

Or

(b) What is common class pattern strategy? Explain.

14. (a) How do design axioms help to avoid design pitfalls?

Or

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

15. (a) Discuss the impact of object oriented testing.

Or

(b) Briefly explain client server computing.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain about system development life cycle.

17. Discuss in detail about UML diagrams.

18. Explain about use case driven approach.

19. List and explain the object oriented design axioms.

20. Write detailed notes on coding and maintenance.

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D–5560

Sub. Code
31541/34041

DISTANCE EDUCATION

M.C.A./M.C.A.(Lateral Entry) DEGREE EXAMINATION,
MAY 2022.

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 any two differences between a fund flow and cash flow statement.

3. Explain the concepts – 'cost centre' and 'cost unit'.

4. What is break-even point?

5. What is profit variance?

6. What is budgetary control?

7. What is time value of money?

8. What is working capital?

9. What is a debenture?

10. What is debt capital?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain any five accounting concepts.

Or

(b) Calculate funds from operations from the following profit and loss account :

Profit and loss account

	Rs.		Rs.
To salaries	10,000	By gross profit	2,00,000
To rent	3,000	By profit on sale of machine	5,000
To commission	2,000	By refund of tax	3,000
To discount allowed	1,000	By dividends received	2,000
To provision for depreciation	14,000		
To transfers to general reserve	20,000		
To provision for tax	10,000		
To loss on sale of investments	5,000		
To discount on issue of debentures	2,000		
To preliminary expenses	3,000		
To selling expenses	20,000		
To net profit	1,20,000		
	2,10,000		2,10,000

12. (a) From the following particulars, calculate the sales required to earn a profit of Rs. 1,20,000.

Sales	–	Rs. 6,00,000
Variable costs	–	Rs. 3,75,000
Fixed costs	–	Rs. 1,80,000.

Or

(b) Prepare a cost sheet from the following :

Direct material consumed	Rs. 10,000
Labour	Rs. 5,000
Direct expenses	Rs. 5,000
Factory overheads	10% of prime cost.

13. (a) What is zero base budgeting? What are its advantages and limitations?

Or

(b) A manufacturing company submits the following figures of product "X" for the first quarter of 2007.

Sales (in units) January 50,000; Feb. 40,000; March 60,000.

Selling price per unit Rs. 100

Target of first quarter 2008 :

Sales units increase by 20%

Selling price increase by 10%

Prepare the sales budget.

14. (a) What are the functions of financial management?

Or

(b) A company has to choose one of the following two mutually exclusive projects. Both the projects have to be depreciated on straight line basis. The tax rate is 50%.

Cash inflows (Profit before depreciation and tax)

Year	Project A	Project B
	Rs.	Rs.
0	15,000	15,000
1	4,200	4,200
2	4,800	4,500
3	7,000	4,000
4	8,000	5,000
5	2,000	10,000

You have to use pay-back period as the criterion.

15. (a) What are the different types of cost of capital?

Or

(b) Explain the concept and method of calculating the weighted average cost of capital.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss the scope of management accounting.

17. From the following trial balance you are required to prepare (a) trading account and (b) profit and loss account (c) balance sheet for the year ended 31st March 2009.

Particulars	Debit (Rs.)	Credit (Rs.)
Purchases and sales	13,500	26,000
Trade expenses	500	
Office expenses	450	
Salaries	3,500	
Electricity charges	550	
Carriage inwards	300	
Returns	600	500
Discounts	200	300
Bank charges		150
Stock	6,000	
Cash in hand	12,000	
Capital		10,650
	37,600	37,600

Value of closing stock Rs. 4,500. Outstanding salary Rs. 500.

18. Prepare a cash budget from April to June from the following data :

	Sales Rs.	Purchases Rs.	Wages Rs.
February	1,80,000	1,24,800	12,000
March	1,92,000	1,44,000	14,000
April	1,08,000	2,43,000	11,000
May	1,74,000	2,46,000	10,000
June	1,26,000	2,68,000	15,000

50% of credit sales are realized in the month following sales and the remaining 50% in the second month following. Creditors are paid in the month following the month of purchase. Wages are paid on the first of every month. Cash at bank on 1st April Rs. 25,000.

19. A choice is to be made between two competing proposals which require an equal investment of Rs. 50,000 and are expected to generate net cash flows as under :

End of year	Project A Rs.	Project B Rs.	PV factor @ 10% Rs.
1	25,000	10,000	0.909
2	15,000	12,000	0.826
3	10,000	18,000	0.751
4	Nil	25,000	0.683
5	12,000	8,000	0.621
6	6,000	4,000	0.564

The cost of capital of the company is 10%. Which project should be chosen, why?

Evaluate the project proposals under :

(a) Pay-back period

(b) Discounted cash flow method.

20. Explain the different types of dividend policy.

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D–5561

Sub. Code
31542/34042

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2022.

Fourth Semester

COMMUNICATION SKILLS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. List the interpersonal barriers to effective communication.

2. Distinguish between communication and effective communication.

3. Write a note on upward communication.

4. Mention the various forms of the oral communication.

5. Mention any two barriers to effective communication.

6. List a few disadvantages of advertisement.

7. Name some of the audio — visual aids used in a presentation.

8. What is the objective of confuting a group discussion?

9. Briefly explain the three levels of communication.

10. What are the disadvantages of an email?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Discuss the barriers to effective communication.

Or

(b) Discuss the importance of the down ward communication.

12. (a) Explain non – verbal communication with suitable example.

Or

(b) Explain how you would organize the content in an effective presentation.

13. (a) Explain the importance of group discussion.

Or

(b) Write a note on the importance of uniting skills.

14. (a) Explain verbal communication with examples.

Or

(b) Write briefly the importance of soft skills.

15. (a) What are the ingredients of a goods resume?

Or

(b) The importance of writing letters- Discuss.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write an essay on leadership qualities.

17. Discuss the various contents evaluated in a group discussion.

18. Write an essay on the various modes of greetings.

19. Discuss the different types of barriers to communication.

20. Write an essay on the importance of communication.

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D–5562

Sub. Code
31543/34043

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2022.

Fourth Semester

INTERNET AND JAVA PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. Define the term: WAN.

2. What do CC and BCC mean in Email?

3. What are the benefits of Java programming?

4. How to execute a Java program using command line arguments?

5. List down the built-in packages available in Java.

6. What is wrapper class? Give an example.

7. Define the priorities of a Thread.

8. Write down the code to create arc using Graphics class.

9. What is the purpose of Define DataOutputStream class?

10. What is the use of BufferedReader class?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) What is a web browser? What does a web browser do?

Or

(b) Explain the role of search engines in Internet.

12. (a) Write in detail about relational operators with an example program.

Or

(b) Write a Java program to check the given number is odd or even.

13. (a) Explain how multiple inheritance is performed in Java with an example.

Or

(b) Write a Java program to perform matrix addition.

14. (a) With examples, discuss about the following: (i) try.. catch (ii) throws

Or

(b) Explain briefly about the way of passing parameters to an applet.

15. (a) Write in detail about Buffered Writer class in Java.

Or

(b) Discuss about InputStream classes in Java.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. How to transfer files in server using FTP? Explain.

17. Illustrate how to implement break and continue statements with an example.

18. Write short notes on the following string handling functions.

    (a) chatAt()

    (b) lastIndexOf()

    (c) length()

    (d) concat()

    (e) replace()

19. Discuss about lifecycle methods of a Thread in Java. Explain them with examples.

20. Explain object streams and piped streams through examples.

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D–5563

Sub. Code
31551/34051

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2022.

Fifth Semester

COMPUTER NETWORKS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the key elements of a protocol?

2. Which OSI layers are the network support layers?

3. What do you mean by CRC?

4. Specify the reasons for congestion.

5. Differentiate between circuit switching and packet switching.

6. What is called Flooding?

7. Mention the fields available in IP address.

8. What is the way to establish a TCP connection?

9. What is authentication?

10. What is conventional encryption?

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss the applications of Computer Networks.

Or

(b) Briefly describe the various network topologies.

12. (a) What is called Block coding? Explain.

Or

(b) Write about one-bit sliding window protocol.

13. (a) Explain static routing algorithm.

Or

(b) Explain the Hierarchical routing mechanism.

14. (a) Compare and Contrast Connection oriented vs Connectionless services.

Or

(b) Write short notes on Remote procedure call.

15. (a) Discuss the cryptographic principles.

Or

(b) Write short notes on security services.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the OSI reference model with neat sketch.

17. Explain Multiple access protocols.

18. Describe the congestion control algorithms.

19. Explain about transport layer connection establishment and termination.

20. What are the two types of cryptographic principles? Explain.

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D–5564

Sub. Code
31552/34052

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
MAY 2022.

Fifth Semester

DATA MINING AND WARE HOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is a data warehouse?

2. What is called metadata repository?

3. What is meant by Frequency Item set?

4. Write down the formula of Bayesian rule

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

6. What is meant by unsupervised learning?

7. Define the term web mining.

8. What do you mean by the term ‘information retrieval’?

9. What is known as Verasity in big data?

10. Write the meaning of the term map reduce.

PART B — ($5 \times 5 = 25$ marks)

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

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

Or

(b) Why data pre-processing is important in data analytics? Explain.

12. (a) Write and explain the steps in Pincher search algorithm.

Or

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

13. (a) Describe the concept of Neural network.

Or

(b) Write short notes on hierarchical clustering.

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 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about Data mining techniques with suitable examples.

17. Explain the procedure of Apriori algorithm in detail.

18. Explain the characteristic of Neural Network and genetic algorithm.

19. Explain in detail about of Text mining and text clustering.

20. Discuss about the approaches of traditional analytics and Big data analytics.

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D–5565	Sub. Code
	31553/34053

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
MAY 2022.

Fifth Semester

VISUAL PROGRAMMING AND .NET

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write the features of Solution Explorer.

2. Differentiate between web service and web pages.

3. What is console application?

4. What are called properties in C#?

5. What is meant by delegates in C#?

6. Expand and write a note on the term CLR.

7. What is the use of breakpoint?

8. Write down the utilities of watch window.

9. What is called MFC?

10. List out the types of layouts.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the features of Docking window and floating window.

Or

(b) Describe the purpose of status bar and solution explorer.

12. (a) Write short notes on primitive types in C#.

Or

(b) How to Declare and use a method? Explain with suitable example

13. (a) Explain about Arrays and generics in C# with suitable examples.

Or

(b) How to create a new project in C#? Explain with suitable examples.

14. (a) Explain the configuration settings of the debugging mode in Visual studio projects? Explain.

Or

(b) Write short notes on application state inspection.

15. (a) Explain the architecture of MFC.

Or

(b) Explain the Web service deployment procedure.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about features of Environment setting of Visual Studio.

17. Explain in detail about the properties and fields in C# with suitable code examples.

18. How to create a project and construct solutions? Explain in detail.

19. Discuss about features of LINQ.

20. Discuss about the understanding of ASP.NET MVC.

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D–5566

Sub. Code
31561/34061

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, MAY 2022.

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 questions.

1. Define the term Cloud Computing.

2. List down the types of Cloud Deployment models.

3. How to collaborate the Contact lists using Cloud?

4. What are the various types of Online Project Groups in Cloud Computing?

5. What is the purpose of Cloud Calendar Application?

6. What are the tools available in Cloud for storing and sharing the files?

7. Define Software-as-a-Security Service.

8. What is the purpose of Amazon S3?

9. How the Open Source platforms collaborate with Cloud Computing?

10. What is meant by Nimbus Deployment in Cloud Computing?

SECTION B — ($5 \times 5 = 25$ 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 Deployment Models with neat Sketch.

12. (a) How the Cloud Services Collaborate on Group Projects and Events?

Or

(b) List and explain briefly about the Online Scheduling Applications available in the Cloud Computing.

13. (a) Analyze the working procedure for Cloud Contact Management with suitable illustration.

Or

(b) Describe in detail about the Event Management Applications available in the Cloud.

14. (a) Explain the Risks involved in Storing Data in Clouds.

Or

(b) Write short notes on Map- Reduce Technique.

15. (a) Describe briefly about the Eucalyptus Open Source platform application for Cloud.

Or

(b) Describe the how distributed Search engine works in Cloud Governance.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the various Cloud Development Services and Tools available? Explain in detail.

17. How the Cloud Computing is used for Managing Community? Explain in detail.

18. Describe in detail the Event Management Applications available in Cloud with Neat Sketch.

19. Explain in detail with proper illustration, the Web-Based Databases Management.

20. Recommend the planning strategies for migrating the application of Open Nebula.

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D–5567

Sub. Code
31562/34062

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry)
DEGREE EXAMINATION, MAY 2022.

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 are the characteristics of Soft Computing?

2. Define the term Artificial Neural Network.

3. How Back Propagation Network works?

4. Define the term Unsupervised Learning.

5. Differentiate between Crisp and Fuzzy Sets.

6. What do you mean by Fuzzification?

7. Define the term Fuzzy measure.

8. Mention the real life applications of Fuzzy Inferences.

9. What are the elements of Genetic Algorithm?

10. List the applications of Genetic Algorithm.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Distinguish between Soft Computing and Hard Computing.

Or

(b) Describe in detail about Hebb Network.

12. (a) Write short notes on Hopfield Network.

Or

(b) Discuss on ART network.

13. (a) Analyze the working procedure for Fuzzy set operations with suitable illustration.

Or

(b) Categorize the membership functions of Fuzzy sets.

14. (a) Write short notes on Aggregation of Fuzzy Rules.

Or

(b) Explain briefly about Fuzzy Decision Making.

15. (a) Write short notes on Fitness Function with suitable application example.

Or

(b) Summarize the Schema Theorem with proper illustration.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the working of Neural Network architecture learning process with data sets.

17. Elucidate the Back propagation network along with algorithm and neat Sketch.

18. Elaborate on Fuzzification and Defuzzification methods with suitable sets.

19. Discuss in detail about the Fuzzy Arithmetic and fuzzy operations with proper illustration.

20. Elaborate on the Operations of Genetic Algorithm with suitable example.

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D–5568

Sub. Code
31563/34063

DISTANCE EDUCATION

M.C.A./M.C.A. (LATERAL ENTRY) DEGREE EXAMINATION, MAY 2022.

Sixth Semester

BIG DATA ANALYTICS

(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 five major components of big data environment.

2. What is Hadoop?

3. What is called mapper?

4. What are the main components of map reduce?

5. What is called data stream mining?

6. What is archival store?

7. What is called link analysis?

8. What is meant by social network in the internet?

9. List out the types of social network.

10. Define the term overlapping in social network.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain about current trends in data analytics approach.

Or

(b) Explain about limitations of hadoop.

12. (a) Explain about mapping tasks in map reduce?

Or

(b) Write short notes on distance measures.

13. (a) Briefly explain about applications of data stream.

Or

(b) How to manage the streaming data? Explain with an example.

14. (a) Write short notes on page rank computation.

Or

(b) How page rank concept using by search engine?

15. (a) Explain about Heterogenous social network.

Or

(b) Write short notes community classification in social networks.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain in detail about physical architecture of Hadoop.

17. Describe the NN search problem formulation.

18. Discuss about data stream model.

19. Discuss about history of search engine and spam.

20. Explain in detail about the types of social networks.

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