D–1548	Sub. Code
	31511

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

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 the binary number 1011.0011 to equivalent decimal number.

2. State DeMorgan's theorem.

3. What is full adder?

4. What is flip-flop?

5. Write the four phases of instruction cycle.

6. List any two memory reference instructions.

7. Compare isolated I/O and memory mapped I/O.

8. What is baud rate?

9. Why the size of cache memory and main memory are related?

10. What is meant by control word?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write the fundamental concepts of Boolean Algebra.

Or

(b) Write short notes on sum of products and products of sum.

12. (a) Brief on Multiplexer with a neat sketch.

Or

(b) Explain briefly about error detection codes.

13. (a) Write about computer registers.

Or

(b) With a neat sketch, explain the design of accumulator logic.

14. (a) Brief on stack organization.

Or

(b) Write short notes on DMA.

15. (a) What is Associative memory? Explain briefly.

Or

(b) Give a brief account on Auxiliary memory.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain various numeric and character codes.

17. Describe fixed point and floating point representations with examples.

18. Discuss in detail about various memory reference instructions.

19. Explain various types of addressing modes.

20. Elaborate on cache memory.

———————

D–1549	Sub. Code
	31512

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

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 is object oriented programming? How is it different from procedure oriented programming?

2. What is the purpose of get() and put() functions?

3. State the use of scope resolution operator.

4. What is an inline function?

5. What is operator overloading? State the reason for overloading operators.

6. What is an abstract class?

7. Write the syntax of class template.

8. What is file pointer? What are the two methods available for opening the files?

9. List two common examples for exceptions.

10. What happens when a raised exception is not caught by catch block?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Briefly discuss the software evolution of object oriented language.

Or

(b) Discuss various unformatted I/O operations.

12. (a) Explain the different ways to define a member function in C++.

Or

(b) Explain friend function with the help of a suitable example.

13. (a) Briefly explain about function overloading.

Or

(b) Write short notes on pure virtual functions.

14. (a) Explain in detail about function template.

Or

(b) List and explain the use of any four file mode parameters.

15. (a) Write a C++ Program for exception handling in constructors and destructors.

Or

(b) Illustrate the throwing mechanism in C++.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss the basic concepts of object oriented programming.

17. Explain the various types of constructors in C++.

18. Explain in detail about multiple and multilevel inheritance with neat diagrams.

19. Discuss class template with multiple parameters. Give a suitable example.

20. When do we need multiple catch blocks for a single try block? Explain with suitable example.

———————

D–1550

Sub. Code
31513

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

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. List out the different types of data structure.

2. What are the characteristics of an array?

3. What is header linked list?

4. What are the operations performed on queue?

5. Define the term complete binary tree.

6. Define the term hashing.

7. What is meant by linear search?

8. Mention the types of searching.

9. What do you mean by internal and external sorting?

10. List the steps in selection sort procedure.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss on time and space complexity of an algorithm.

Or

(b) Briefly explain about primitive data types.

12. (a) Give an algorithm to convert an infix expression to a postfix expression using stack. Illustrate the steps.

Or

(b) Explain in detail about the representation of linked list.

13. (a) Brief on the various ways of representing a binary tree.

Or

(b) Write procedures for preorder, inorder and postorder traversal of a binary tree.

14. (a) Write and explain non-recursive algorithm for binary search.

Or

(b) Discuss on the applications of binary tree.

15. (a) Write an algorithm to sort an array of integers using tree sort.

Or

(b) Sort the sequence 96, 31, 27, 42, 76, 61, 10, 4 using radix sort and illustrate the required steps.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about two-dimensional array giving examples.

17. Describe in detail about doubly linked list with suitable example.

18. Explain the following operations on a binary search tree with suitable algorithms.

    (a) Find a node

    (b) Find the minimum and maximum elements.

19. Using binary search, illustrate the steps to search for the element 26 in the list of numbers: 10,7,17,26,32,92,35,23.

20. Interpret an algorithm to sort a set of 'N' numbers using bubble sort and illustrate the sorting steps for the following set of numbers: 87,13,21,49,64,91,36,65,58,11.

———————

D–1566

Sub. Code
31514

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

First Semester

Computer Applications

DISCRETE MATHEMATICS

(CBCS 2020 – 21 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. State De Morgan's Law.

2. If $A = \{2,4,6\}$ and B $\{3,4,5\}$. Find A-B and B-A.

3. Let $X = \{1,2,3,4\}$ and $R = \{(1,1),(1,4),(4,1),(4,4),(2,2),(2,3),(3,2),(3,3)\}$ write the matrix and sketch its graph.

4. Define partially ordered set.

5. Define on-to function and give an example.

6. Define inverse function.

7. Define monoid.

8. Prove that every subgroup of an abelian group is abelian.

9. Define subgraph.

10. Three coins are tossed. Find the probability of getting atleast two heads.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Show that $\neg(P \vee (\neg P \wedge Q))$ and $\neg P \wedge \neg Q$ are logically equivalent.

Or

(b) 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 studied 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

12. (a) Show that the union of two symmetric relations are again a symmetric relation.

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 $R \cup S, R \cap S$, $R \, o S, R \oplus S$.

13. (a) Let $f : X \to Y$ and $g : Y \to Z$ and both f and g are onto, show that g of is also onto.

Or

(b) Prove that an inverse of an invertiable function is invertiable.

14. (a) Prove that for any commutative monoid $\left(M.^{*}\right)$ the set of idempotent elements of M forms submonid

Or

(b) Prove that the intersection of two subgroups of a group is a subgroup.

15. (a) Show that the sum of degree of all the vertices in a graph G is even.

Or

(b) A bag contains 5 red and 4 white balls. Two balls are drawn successively form the box without replacement and it is noted that the second one is white. What is the probability that the first one is white?

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Show that the following implications by using indirect method. $(R \to \neg Q)$, $R \vee S, S \to \neg Q, P \to Q \Rightarrow \neg P$.

17. Draw the directed graphs representing each of the relations from.

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

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

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

18. Let $f : X \to Y$ and $g : Y \to Z$ be any two invertible functions, then show that $(g\, o\, f)^{-1} = f^{-1} o\, g^{-1}$.

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.

———————

D–1567

Sub. Code
31521

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Second Semester

Computer Applications

ACCOUNTING AND FINANCIAL MANAGEMENT

(CBCS 2020 – 2021 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

All questions carry equal marks.

1. Give the classification of accounts.
2. List out the items on the Asset side of a balance sheet.
3. What is operating ratio?
4. Define cost accounting.
5. What is cost volume profit analysis?
6. What is contribution?
7. What is overhead variance?
8. What is time value of money?
9. What are the different types of working capital?
10. What is cost of capital?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

11. (a) Prepare a schedule of changes in working capital from the following Balance Sheets:

Balance Sheets

Liabilities	1998	1999	Assets	1998	1999
	Rs.	Rs.		Rs.	Rs.
Share Capital	50,000	50,000	Fixed Assets	18,000	28,000
10% Debentures	10,000	20,000	Investments:		
Bills Payable	18,000	6,000	Non-trading	10,000	10,000
Outstanding			Trading	8,000	9,000
expenses	6,000	9,000	Inventories	12,000	18,000
Trade Creditors	33,000	40,000	Trade Debtors	40,000	48,000
			Accrued interest	4,000	6,000
			Unexpired		
			Insurance	–	3,000
			Cash at bank	17,000	2,000
			Cash in hand	8,000	1,000
	1,17,000	1,25,000		1,17,000	1,25,000

Or

(b) What are the limitations of financial accounting?

12. (a) What are the different types of costing?

Or

(b) From the following data calculate:

(i) P/V Ratio

(ii) Variable Cost

(iii) Profit

	Rs.
Sales	80,000
Fixed expenses	15,000
Break even point	50,000

13. (a) A manufacturing company submits the following figures of Product 'X' and Product 'Y' for the first quarter of 2003:

Sales (in units):

January	50,000
February	40,000
March	60,000

Selling price per unit Rs. 100

Target of First Quarter 2004:

Sales units increase by 20%

Selling price increase by 10%

Prepare the Sales Budget.

Or

(b) What is standard costing? State its importance.

14. (a) Explain the discounting and compounding techniques in time value of money.

Or

(b) A project costs Rs. 20,00,000 and yields annually a profit of Rs. 3,00,000 after depreciation @ 12.5% but before tax at 50%. Calculate the Pay-back Period.

15. (a) Explain the various financial leverages.

Or

(b) What are the assumptions and criticisms of Gordon's model of dividend approach?

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

All questions carry equal marks.

16. Consider the following balances extracted from the books of Mr. John as on 31st December 2016

Particulars	Rs.
Capital	20,000
Debtors	8,000
Creditors	10,500
Purchases	60,000
Sales	80,000
Income tax of John Paid	500
Opening stock	12,000
Office salaries	6,600

Particulars	Rs.
Establishment expenses	4,500
Selling expenses	2,300
Furniture	10,000
Cash at bank	2,400
Miscellaneous receipts	600
Drawings	4,800

Adjustments:

(a) Salaries outstanding amounted to Rs. 600

(b) Provide depreciation on furniture @ 10% p.a.

(c) Provide interest on capital for the year @ 5% p.a.

(d) Stock on 31st December, 2016 Rs. 14,000

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

17. Discuss the differences between Management Accounting and Financial Accounting.

18. The details regarding composition and the weekly wage rate of labour force engaged on a job scheduled to be completed in 30 weeks are as follows:

Category of workers	Standard		Actual	
	No. of labourers	Weekly wage rate Rs.	No. of labourers	Weekly wage rate Rs.
Skilled	75	60	70	70
Semi-skilled	45	40	30	50
Unskilled	60	30	80	20

The work is actually completed in 32 weeks. Calculate the various Labour Variances.

19. Explain the various methods of capital budgeting techniques.

20. Discuss the various types of dividend policy.

———————

D–1552	Sub. Code
	31522

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Second Semester

Computer Applications

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS 2018/2020 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is meant by data abstraction?

2. Define the term Weak entity.

3. What is the use of group by clause?

4. Define the term Tuple relational calculus.

5. Write an example for using NOT operator.

6. What is multi valued dependency?

7. Define the term concurrency in DBMS.

8. Define the term Granularity.

9. How hash based indexing is implemented?

10. Cite the features of tree indexing.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) What are the different types of data models? Discuss.

Or

(b) Explain the structure of database with an appropriate diagram.

12. (a) Explain about integrity constraints.

Or

(b) Explain natural join with syntax and example.

13. (a) Bring out the uses of aggregation operators.

Or

(b) Explain database decomposition? Why it is necessary?

14. (a) Discuss about the states of transactions.

Or

(b) Narrate timestamp based protocols.

15. (a) Compare and contrast primary and cluster indexes.

Or

(b) Discuss about file organization structure.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Design an E-R diagram indicating all entities and attributes for employee database.

17. Consider the following relational schema:

Employee (empno, name, office, age)

Books (isbn, title,authors,publisher)

Write commands to enter data into these tables.

Write the following queries in relational algebra.

(a) Find the names of employees who have borrowed a book Published by Pearson.

(b) Find the names of employees who have borrowed all books Published by Pearson.

18. Describe in detail about fourth normal form giving an example.

19. How to check serializability in transaction? Explain

20. Elaborate on dynamic index structure in B+ tree.

———————

D–1553	Sub. Code
	31523

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Second Semester

Computer Applications

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 are the features of computer graphics?

2. What is meant by refreshing in display devices?

3. What do you mean by the term translation?

4. What is reflection in computer graphics?

5. What is polygon surface in computer graphics?

6. What is meant by approximation in computer graphics?

7. What is geometric transformation in computer graphics?

8. What is viewport and window in computer graphics?

9. What is depth buffer method in computer graphics?

10. Write a note on A-buffer method.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL the questions.

11. (a) Discuss briefly about random scan systems with a neat sketch.

Or

(b) What is a boundary fill algorithm? Explain with a neat sketch.

12. (a) Write short notes on rotation operation with necessary diagrams.

Or

(b) What are homogeneous coordinate systems? Explain.

13. (a) Write short notes on illumination models in computer graphics.

Or

(b) Discuss briefly on Gouraud shading rendering method in computer graphics.

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

Or

(b) Elaborate on parallel projection with a neat sketch.

15. (a) Write short notes on Area sub division method with a neat sketch.

Or

(b) What is raster animation in computer graphics? Explain with an example.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain Bresenham's line drawing algorithm with necessary diagrams. Bring out its advantages and disadvantages.

17. Elaborate on Sutherland-Hodgemam polygon clipping algorithm with a neat sketch.

18. Enumerate the properties of B-Spline curves.

19. What is called shearing? Explain in detail about its types with an example.

20. Describe in detail about octree method with a neat sketch.

———————

D–1568	Sub. Code
	31524

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Second Semester

VISUAL PROGRAMMING WITH .NET

(CBCS 2020 – 21 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the purpose of visual studio?

2. Write the use of database projects.

3. List the Looping statements in VB.Net

4. Write a simple program to exemplify “return” statement.

5. How to navigate the solution explorer in Visual Studio?

6. What is Array? List any two benefits of it.

7. What is the use of foreign key?

8. Write the purpose of auto window.

9. What is Canvas Layout?

10. What is WPF?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain briefly about Visual Studio navigation.

Or

(b) Explain Visual Studio Windows management.

12. (a) Write short notes on Code Skeleton.

Or

(b) How to create the 'VB.Net Class? Explain.

13. (a) Explain how to implement the interface?

Or

(b) Explain about inheritance in VB.Net.

14. (a) Explain Debugging Breakpoints with suitable examples.

Or

(b) Write the procedure to create an employee database application in Visual Studio.

15. (a) Explain the desktop application layouts.

Or

(b) Explain the procedures to use the WPF controls

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the Visual Studio Project types.

17. Discuss in detail about VB and C# Loop controls.

18. Elaborate on Project Compilation in Visual Studio.

19. Explain about working with data in Visual Studio.

20. Explain about working with Data in WPF.

———————

D–1569	Sub. Code
	31531

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Master of Computer Applications

SOFTWARE ENGINEERING

(CBCS 2020–21 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions

1. Mention the role of a software.

2. What do you mean by process assessment?

3. List any two tasks of Requirement engineering.

4. What is scenario-based modelling?

5. What are the elements of design model?

6. What is called design evaluation?

7. What is Integration testing?

8. What is regression testing?

9. How software risks are identified?

10. What do you mean by software reliability?

PART B — (5 × 5 = 25 marks)

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

11. (a) Briefly describe the generic view of process.

Or

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

12. (a) What is called validating requirements? Explain.

Or

(b) Explain the steps in creating a behavioural model.

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

Or

(b) Explain the styles and patterns of architectural design.

14. (a) Explain black box testing technique.

Or

(b) Explain product and process metrics.

15. (a) Write short notes on RMMM plan.

Or

(b) Discuss the ISO 9000 Quality standards.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Explain the various Incremental software process models.

17. Describe the design and construction of Requirement Engineering.

18. Describe the various steps in User Interface design.

19. Explain the following testing strategies:

    (a) Validation testing

    (b) Regression testing

20. Discuss the various stages of software reviews.

———————

D–1555

Sub. Code
31532/34032

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Computer Application

OPERATING SYSTEM

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Why the operating system is viewed as the resource allocator?

2. List any Three OS Components.

3. List the various process states.

4. What is thread in OS?

5. Define the term 'Race condition'.

6. When does deadlock situation arise?

7. Write down the differences between paging and segmentation scheme.

8. What is virtual memory?

9. What are the file attributes?

10. What is meant by Disk scheduling?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss on OS System calls.

Or

(b) What are the functions of operating system? Explain.

12. (a) Write short notes on Process Control Block.

Or

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

13. (a) Explain about any one of the classic — problem of synchronization.

Or

(b) Discuss the various methods for handling Deadlocks.

14. (a) Explain the difference between internal and external fragmentation.

Or

(b) Describe how swapping takes place in memory management.

15. (a) Discuss the various file access methods.

Or

(b) What is Free space management? Explain.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the Operating system structure and explain its functions.

17. Explain the various process states with neat sketch.

18. Explain the following:

    (a) Monitors

    (b) Deadlock prevention.

19. Explain any two page replacement algorithms in detail.

20. Describe the following :

    (a) File Access Methods

    (b) Disk structure.

———————

D–1570

Sub. Code
31533

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Master of Computer Applications

INTERNET AND JAVA PROGRAMMING

(CBCS 2020-21 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. Write the steps involved in creating an Email ID.

2. List the names of any THREE search engines.

3. How C language differs from C++ language?

4. Define the term Token.

5. Define the term Constructor.

6. What is the use of Interface in Java?

7. What is Multi-threading?

8. Differentiate between Error and Exception.

9. What are streams in Java?

10. What is the use of Buffered Reader class?

PART B — (5 × 5 = 25 marks)

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

11. (a) Briefly explain about Domain Name System.

Or

(b) Explain the working of chat and conferencing applications.

12. (a) Discuss the features of Java Language.

Or

(b) Write about decision making and looping statements.

13. (a) Explain Inheritance and its categories.

Or

(b) Write about single dimensional array.

14. (a) Brief the methods involved in creating and extending thread class.

Or

(b) Describe the life cycle of an Applet.

15. (a) Explain how to read or write characters to a file.

Or

(b) Discuss about Random access files.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain in detail about FTP and Telnet.

17. Illustrate the use of operators in Java.

18. Write a Java program to illustrate the concept of package.

19. Write in detail about methods used in Exceptions.

20. Explain the functions of Byte and Character stream classes.

———————

D–1571

Sub. Code
31534

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Computer Applications

COMPUTER NETWORKS

(CBCS 2020–21 Academic Year onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is meant by line configuration?

2. What is analog signal?

3. What is CRC?

4. Give a note on sliding window protocol.

5. What is meant by circuit switching?

6. What is called static routing?

7. Expand the terms UDP and TCP.

8. Why we use DNS in network?

9. List out the encryption models.

10. What is RSA?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Brief on different types of topologies.

Or

(b) How the networks are categorized? Explain.

12. (a) Describe the concept of flow and error control in data link layer.

Or

(b) Explain the following:

(i) ARQ

(ii) Go-back-in ARQ

13. (a) Elucidate the working principles of packet switching.

Or

(b) Explain congestion control algorithm.

14. (a) Connection oriented vs connectionless services — Compare and contrast.

Or

(b) Discuss about WWW and HTTP.

15. (a) Describe the principles of cryptography.

Or

(b) Explain security services in symmetric key cryptography.

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

Answer any THREE questions

16. Illustrate Open System Interconnection layers.

17. Discuss about the multiple access protocols.

18. Explain any two routing algorithms.

19. What are the services provided by transport layer? Explain.

20. Elaborate on the working principles of transposition and substitution ciphers.

———————

D–1572	Sub. Code
	31535

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Computer Applications

DATA MINING AND WAREHOUSING

(CBCS 2020-21 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define the term Schema in data warehouse.

2. Expand the term OLAP and write a note on it.

3. What do you mean by association rule?

4. List the methods to discover association rule.

5. Expand the term DBSCAN and write a note on it.

6. Write the differences between supervised and unsupervised learning.

7. What is meant by web mining?

8. Define the term Knowledge mining,

9. List the types of big data.

10. List the technologies available for big data.

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe OLAP operations.

Or

(b) Brief on Data mining techniques.

12. (a) Write steps in Apriori algorithm.

Or

(b) Brief on decision tree classification.

13. (a) Describe briefly about K-Medoid algorithm.

Or

(b) What is genetic algorithm? Explain briefly about the operations in GA.

14. (a) Explain about web structure mining.

Or

(b) Write short notes on web usage mining.

15. (a) Explain the characteristics of big data.

Or

(b) Describe the core components of Hadoop.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Describe the hardware and operating system requirements for a data warehouse.

17. Explain in detail about classification by Back Propagation.

18. Explain CLARANS algorithm.

19. Explain in detail about Text mining.

20. Explain in detail about Big Data Analytics.

———————