D-3181

Sub. Code
31511

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2019.

First Semester

Computer Application

DIGITAL COMPUTER ORGANIZATION

(CBCS 2018 – 19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Convert the given hexa decimal number 68BE into binary.

2. State DeMorgan's theorem.

3. What is decoder?

4. Write any two characteristics of flip flop.

5. List the four phases of instruction cycle.

6. Specify few memory reference instructions.

7. Define the term peripheral.

8. What are the modes of transfer?

9. Write the use of associative memory.

10. Compare virtual memory and cache memory.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Obtain l's and 2's complement of the following 4 digit binary numbers : 1011; 1100; 0000; 1000; 1111.

Or

(b) Write the fundamental concepts of Boolean Algebra.

12. (a) Discuss the operation of full adder with circuit diagram and truth table.

Or

(b) Briefly explain about Error detection codes.

13. (a) Write short notes on timing and control.

Or

(b) Discuss on Accumulator logic.

14. (a) Brief on program control instructions.

Or

(b) Write the purpose of Input Output Interface.

15. (a) Discuss about Auxiliary memory.

Or

(b) What is page fault? How it is handled?

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Simplify the Boolean function $\sum(0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$ using K-Map.

17. Explain the different types of flip flops.

18. Explain how interrupt helps in I/O.

19. Discuss in detail about DMA controller.

20. Describe various mapping procedures of cache.

———————

D–3182

Sub. Code
31512

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2019.

First Semester

OBJECT ORIENTED PROGRAMMING AND C++

(CBCS 2018 – 2019 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. List the names of predefined streams.

2. Draw the hierarchy of console stream classes.

3. Write the general form of a class declaration.

4. What is inline function?

5. What is polymorphism?

6. What is type conversion? List out its types.

7. What is the need for template function in C++? What are their advantages?

8. List out the names of manipulators.

9. List out the tasks to be performed for error handling code.

10. What is the need for exception handling?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

11. (a) Bring out the basic concepts of OOP.

Or

(b) Differentiate between procedural and object oriented programming.

12. (a) What are the two different ways of defining a member function? Explain with example.

Or

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

13. (a) Explain multiple inheritance with suitable example.

Or

(b) Write short notes on virtual function with program code.

14. (a) Write short notes on class template with multiple arguments.

Or

(b) Write program code for random access from a file.

15. (a) When do we use multi- catch handlers? Explain with an example.

Or

(b) Write a program to throw an exception from a derived class.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

All questions carry equal marks.

16. Explain about Formatted and Unformatted I/O with suitable example.

17. What is constructor? Explain the default and parameterized constructor with examples.

18. Define operator overloading. Explain binary operator overloading with example program.

19. Write a program to open a file for reading and writing.

20. What are uncaught exceptions? Write the functions that handle uncaught exceptions with program code.

———————

D–3183	Sub. Code
	31513

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2019.

First Semester

Computer Application

DATA STRUCTURE AND ALGORITHMS

(CBCS 2018–19 Academic year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. What is the need of data structure?

2. Define the term array. What are the characteristics of array?

3. Write the rules to convert an Infix notation to Postfix notation.

4. What is the need for the header file?

5. What is the purpose of non-linear data structure?

6. Create a binary tree for the following expression: ((a*b+c)*d)

7. What is searching?

8. Compare linear search and binary search.

9. What is meant by sorting?

10. Write the working principle of selection Sort Algorithm.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

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

Or

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

12. (a) What is a Queue? Explain its operations with example.

Or

(b) Write an algorithm to perform the following operations on a singly linked list

(i) Insert new node at end

(ii) Delete the last node

(iii) Count the number of nodes.

13. (a) Discuss on various types of binary tree.

Or

(b) Explain the various representations of binary tree in detail with suitable examples.

14. (a) Discuss the efficiency of binary search tree operational.

Or

(b) Using binary search, search the number 26 in the following list of numbers and give the steps

10,7,17,26,32,92

15. (a) Write the algorithm for insertion sort.

Or

(b) Sort the following numbers using radix sort method.

77, 12,8,39,27,21,44, 18,6,427,117,237,5671,600

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

All questions carry equal marks.

16. Discuss on multi-dimensional array giving suitable examples.

17. What is Stack? Explain its operations with examples.

18. Explain in-order, pre-order and post-order Traversal operations on Binary tree with example.

19. Explain linear search and Binary search with illustrations.

20. What is quick sort? Sort the following numbers using quick sort procedure and discuss its time complexity and space complexity.

42, 12, -8, 98, 67, 83, 08, 104, 07.

D–3184

Sub. Code
31521

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Computer Application

SOFTWARE ENGINEERING

(CBCS – 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the goals of software engineering?

2. Write any four factors that influences the quality and productivity.

3. What is requirement engineering?

4. What is SRS?

5. What are the advantages of modularization?

6. What is the difference between flow based and class based modelling?

7. What is the goal of unit testing?

8. Write down the difference between black box and white box testing.

9. What is meant by Risk projection?

10. List the factors that determine software quality.

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss on Software myths.

Or

(b) Explain the Incremental process model with neat sketch.

12. (a) Explain the various tasks of Requirement engineering.

Or

(b) Explain Scenario based modelling technique.

13. (a) Discuss the various design models.

Or

(b) Explain the various architectural styles and patterns.

14. (a) Write short notes on Validation testing.

Or

(b) Explain the source code metrics for testing strategies.

15. (a) Discuss Proactive Vs Reactive risks.

Or

(b) Explain formal technical reviews.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe Evolutionary process models with neat sketch.

17. Explain Object oriented and Class based model of Requirement engineering.

18. Describe the various steps in user interface design.

19. Explain the testing strategies for object oriented design

20. Explain the Risk protection and refinement systems.

———————

D–3185

Sub. Code
31522

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Computer Application

RELATIONAL DATA BASE MANAGEMENT SYSTEMS (RDBMS)

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term data abstraction.

2. What are weak entities?

3. How are entity sets mapped into relation?

4. What is selection operator?

5. Mention the parts of a basic SQL query.

6. Define the term NULL value.

7. What are ACID properties?

8. What is meant by precedence graph?

9. Why does a DBMS store data on external storage?

10. What is primary index?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe about the views of data.

Or

(b) Write the role of database administrator.

12. (a) Illustrate integrity constraints with an example.

Or

(b) Give a brief account on domain relational calculus.

13. (a) Explain nested query with examples.

Or

(b) What are aggregation operations? Explain

14. (a) Discuss about Timestamp based protocols.

Or

(b) Write short notes on log based recovery.

15. (a) Compare different file organizations.

Or

(b) Brief on Indexed Sequential Access method.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. With neat sketch, explain the architecture of DBMS.

17. Explain different types of join operation.

18. What is Normalization? Explain FIRST, SECOND AND THIRD normal forms.

19. Give a detailed notes on serializability.

20. Explain about clustered indexes.

———————

D–3186

Sub. Code
31523

DISTANCE EDUCATION

M.C.A. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Computer Application

COMPUTER GRAPHICS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL question.

1. What are normalized coordinates in a graphics representation?

2. What are called output primitives?

3. What is homogenous coordinate system?

4. Define rotation transformation in a 2D space.

5. Define the boundary representation of polygon surfaces.

6. What are called hermite curves?

7. Define scaling transformation in a 3D space.

8. Define shear transformation in a 3D space.

9. Define hidden surface problem.

10. What is the use of depth buffer?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Brief on the applications of computer graphics.

Or

(b) What are raster scan systems? Explain with its structure.

12. (a) What are shear transformations? Explain the two types of shear transformations.

Or

(b) How transformations are carried out between coordinate systems? Explain

13. (a) Write short notes on polygon tables with its structure.

Or

(b) What is called a curve? Explain the three major classifications of curves.

14. (a) Describe the rotation of objects in a 3D space.

Or

(b) Briefly discuss about view volumes in 3D space.

15. (a) What are called Octrees? Explain with its structure.

Or

(b) Discuss about the area subdivision method showing relationship with specified area boundary.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about the Bresenham's line drawing algorithm with diagram.

17. What is line clipping? Discuss about the Cohonen-Sutherland line clipping algorithm.

18. Describe in detail about Bezier curves with its structure and properties.

19. Elaborate on parallel projection with its structure.

20. Enumerate the basic function in creating computer animation.

———————

D–3187

Sub. Code
31531/34031

DISTANCE EDUCATION

M.C.A. / M.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

DISCRETE MATHEMATICS

(CBCS – 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define conditional statement.

2. Write the following statement in symbolic form: If either Ram takes Calculus or Krishna takes C-programming then Latha will take English.

3. Given S = {2,a,{3},4} and R = {{a}, 3, 4, 1}, indicate whether the following are true or false.

   (a) $\{a\} \in S$.

   (b) $\{1,\{a\},3,4\} \subseteq R$

4. Define partial order relation with example.

5. Construct a function $f : \mathbb{N} \to \mathbb{N}$ such that f is bijection but $f \neq I_n$.

6. Show that the function f from $\mathbb{N} \times \mathbb{N}$ to $\mathbb{N}$ given by $f(x, y) = x + y$ is onto but not 1 – 1, where $\mathbb{N} = \{0,1,2, \ldots\}$.

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

8. Define commutative and associative binary operations with examples.

9. Define Bipartite graph with examples.

10. Prove that the number of edges in a complete graph with n vertices is $\frac{n(n-1)}{2}$.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Construct the truth table of $(Q \wedge (P \to Q)) \to P)$.

Or

(b) Show that $A \cup B = (A \cup \sim B) \cup (\sim A \cup B) \cup (A \cap B)$.

12. (a) Give a example of a relation which is

(i) Reflexive symmetric but not transitive

(ii) Transitive but not reflexive and symmetric

(iii) Neither Reflexive nor symmetric and transitive

(iv) Reflexive symmetric and transitive

(v) Symmetric and Anti-symmetric.

Or

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

13. (a) If $f : X \to Y$ and g: $Y \to Z$ both are onto, show that $g \circ f$ is also onto. Is $g \circ f$ is 1 – 1 if both g and f are 1 – 1?

Or

(b) Let $f : X \to Y$ and g: $Y \to X$. Prove that $g = f^{-1}$ if and only if $g \circ f = I_X$ and $f \circ g = I_Y$.

14. (a) Let $(S, *)$ be given semi group. Then prove that there exists a homomorphism $g : S \to S^S$; where $(S^S, \circ)$ is a semi group of function from S to S under the operation of composition.

Or

(b) Prove that a subset $S \neq \phi$ of group $(G, *)$ is a subgroup of G if and only if $a * b^{-1} \in S$, for all $a, b \in S$.

15. (a) Draw a graph G corresponding to the adjacent matrix $\begin{pmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 0 & 0 & 1 \end{pmatrix}$.

Or

(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.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Obtain the principal conjunctive normal form of the formula S given by $(\neg P \to R) \wedge (Q \rightleftharpoons P)$.

17. Let R be a relation on $\mathbb{Z} \times (\mathbb{Z} \setminus \{0\})$ defined by $\langle a, b \rangle R \langle c, d \rangle \Leftrightarrow ad = bc$. Show that R is equivalence relation.

18. Let F_x be the set of all 1 – 1 onto mappings from {1, 2, 3} onto itself. Find all the elements of F_x and find the inverse of each element.

19. State and prove the fundamental theorem of group homomorphism.

20. Let G be a connected planar simple graph with e edges and v vertices. Let r be the number of regions in a planar representation of G. Then $r = e - v + 2$.

———————

D–3188

Sub. Code
31532/34032

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Computer Application

OPERATING SYSTEM

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term Operating System.

2. What are the services provided by Operating System?

3. List out the operations on the processes.

4. Define the term scheduling.

5. What are semaphores?

6. How to prevent dead lock?

7. What is swapping?

8. Define the term paging.

9. What is meant by directoriey?

10. Define the term file sharing.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write short notes on structure of the Operating System.

Or

(b) What are system calls? Explain.

12. (a) Discuss on process scheduling.

Or

(b) Explain any one scheduling algorithms.

13. (a) Write short notes synchronization hardware.

Or

(b) How do you perform recovery from deadlock? Explain.

14. (a) Illustrate on contiguous memory allocation.

Or

(b) Write short notes on memory segmentation.

15. (a) What are file access methods? Explain.

Or

(b) Describe about disk scheduling.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe about Operating System design and implementation.

17. What is inter-process communication? Explain in detail.

18. Enumerate the methods for handling deadlocks.

19. Briefly outline the memory management strategies.

20. Discuss about file system structure and implementation.

———————

D–3189

Sub. Code
31533/34033

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
DECEMBER 2019.

Third Semester

Computer Application

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 system development methodology?
2. Define the term polymorphism.
3. Name five Booch diagrams.
4. What is data modeling?
5. Who are the actors?
6. Define the term event class.
7. What is concurrency control?
8. What is black box testing?
9. Why are debugging tools important?
10. What are class libraries?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write short notes on Object-Oriented Approach.

Or

(b) Describe the software development process.

12. (a) Draw and explain the state transition diagram for the bank application user interface.

Or

(b) Describe the difference between patterns and framework.

13. (a) Why is analysis a difficult activity?

Or

(b) Describe the noun phase strategy for identifying tentative classes in a problem domain.

14. (a) How would you identify methods and attributes?

Or

(b) Write the impact of object oriented testing.

15. (a) Discuss about the metrics.

Or

(b) Brief on Client/Server computing.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the system development life cycle.

17. What are the different types of UML diagrams? Explain.

18. Discuss on Use case driven approach with example.

19. Explain about Design Axioms.

20. Write detailed notes on coding and maintenance.

———————

D–3190

Sub. Code
31541/ 34041

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Fourth Semester

Computer Application

ACCOUNTING AND FINANCIAL MANAGEMENT

(CBCS 2018 – 2019 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. State the golden rules of accounting.

2. What are the various sources of funds?

3. What are the objectives of cost accounting?

4. What is marginal costing?

5. What is variance analysis?

6. What is master budget?

7. State the objectives of financial management.

8. What is capital budgeting?

9. What is cost of equity?

10. What is dividend?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What are the advantages of financial accounting?

Or

(b) From the following ledger balances, prepare Trial balance.

Particulars	Rs.	Particulars	Rs.
Opening stock	30,000	Purchases	3,00,000
Closing stock	14,000	Debtors	1,20,000
Cash	3,000	Discount allowed	3,400
Bank	5,600	Creditors	90,000
Sales	4,20,000	Salaries	42,000
Rent	9,000	Postage	4,500
Taxes	1,500	Machinery	1,20,000
Drawings	20,000	Purchase returns	6,000

12. (a) What are the differences between cost accounting and management accounting?

Or

(b) From the following information, calculate

(i) Break-Even Point (BEP) in units and

(ii) BEP in sales value

Out put	3,000 units
Selling price per unit	Rs. 30
Variable cost per unit	Rs. 20
Total fixed cost	Rs. 20,000

13. (a) From the following information, compute

(i) Material Price Variance

(ii) Material Cost Variance, and

(iii) Material Usage Variances:

	Standard			Actual		
	Qty. Kgs.	Unit Price Rs.	Total Rs.	Qty. Kgs.	Unit Price Rs.	Total
Material A	10	2.00	20.00	5	3.00	15.00
Material B	20	3.00	60.00	10	6.00	60.00
Material C	20	6.00	120.00	15	5.00	75.00
Total	50		200.00	30		150.00

Or

(b) From the following particulars prepare a Production Budget:

Product	Estimated stock on 1st January in units	Estimated stock on December in units	Total sales in units
A	1,000	1,000	12,000
B	1,000	2,000	10,000

14. (a) ABC Ltd. is considering two projects M and N each costing Rs. 20,000. The net cash flows from the projects are as follows:

Year	1	2	3	4	5	6
Project M	10,000	8,000	6,000	2,000	–	–
Project N	2,000	4,000	6,000	8,000	8,000	9,000

The company has fixed three years as the cut-off period. State which project should be accepted?

Or

(b) "Generally individual's show time preference for money". What reasons for such preference? Illustrate with examples.

15. (a) Examine the usefulness of Debentures as an instrument of long-term finance.

Or

(b) What is meant by Dividend Policy? State the factors that a company should consider while formulating the dividend policy.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. The following particulars are taken from Mohan & Co. Prepare Trading, Profit & Loss account and Balance Sheet as on 30.6.2000.

	Debit	Credit
Capital		1,10,000
Bank	5,000	
Plant and Machinery	35,000	
Land and building	42,000	

	Debit	Credit
Debtors	11,500	
Cash	2,500	
Purchases and sales	20,000	75,000
Purchases return and sales returns	2,000	1,500
Bills receivable	1,500	
Bills payable		2,000
Wages	24,000	
Creditors		6,500
Salaries	12,000	
Discount (cr.)		1,000
Stock on 1.7.99	7,000	
Furniture	5,000	
Carriage inwards	1,000	
Carriage outwards	2,000	
Advertising	1,500	
Travelling expenses	500	
Loans		27,000
Vans and Trucks	50,000	
Telephone	500	
Total	2,23,000	2,23,000

Additional Information:

(a) Stock on 30.6.2000 was valued at Rs. 15,000

(b) Wages outstanding Rs. 1,000

(c) Salaries prepaid Rs. 2,000

(d) Provide depreciation on furniture by 10%

17. Explain the various elements of cost.

18. For the production of 10,000 electric automatic irons; the following are the budgeted expenses:

	Per Unit
	Rs.
Direct material	60
Direct labour	30
Variable overhead	25
Fixed overhead (Rs. 1,50,000)	15
Variable expenses (direct)	5
Selling expenses (10% fixed)	15
Administration expenses (Rs. 50,000 rigid)	5
Distribution expenses (20% fixed)	5
Total cost of sale per unit	160

Prepare a budget for the production of 6,000; 7,000 and 8,000 irons, showing distinctly the marginal cost and the total cost.

19. Explain the factors affecting working capital requirements of a company.

20. Describe the determinants of capital structure.

D–3191

Sub. Code
31542/34042

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
DECEMBER 2019.

Fourth Semester

Computer Application

COMMUNICATION SKILLS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write down the importance of communication.
2. What are the barriers of communication?
3. Write the definition for soft skill.
4. What are the modes of conversation?
5. How do you analyze the audience?
6. What is meant by proximics?
7. Mention the purpose of group discussion.
8. Write a note on mock meeting.
9. How do you prepare for speech writing?
10. What are minutes?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Mention and explain the principles of effective communication.

Or

(b) Write short notes on horizontal communications.

12. (a) Differentiate verbal and non-verbal communication.

Or

(b) Briefly explain the attributes of soft skills.

13. (a) Write a note on presentation.

Or

(b) Write a brief note on kinesics.

14. (a) Highlight the participation techniques in group discussion.

Or

(b) Write a note on planning for interviews.

15. (a) Prepare your resume to apply for a suitable job.

Or

(b) Write short notes on report writing.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the levels of communication.

17. List down and explain Do's and Don'ts of telephone conversation.

18. How do you use audio visual aids for presentation? Discuss.

19. Describe the types of interviews.

20. Write an outline of E-mail and advertising.

———————

D–3192

Sub. Code
31543/34043

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION,
DECEMBER 2019.

Fourth Semester

Computer Application

INTERNET AND JAVA PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. List the functions of modem.

2. Name any two search engines you know?

3. Write any two differences between C++ and Java

4. What is JVM?

5. Differentiate between instance variable and class variable.

6. Write the names any four wrapper classes.

7. What is meant by the term thread?

8. Name the three constants used for assigning priority to threads.

9. Differentiate between byte stream and character stream.

10. What do you mean by the term 'random access'?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on online chatting.

Or

(b) Explain the various domains of Domain Name System.

12. (a) Describe the general structure of a Java program.

Or

(b) Explain the precedence of all the operators giving examples.

13. (a) Write a sample Java program to demonstrate overloading concept.

Or

(b) With examples, explain the various uses of final keyword.

14. (a) What is Synchronization in threaded programming? Illustrate.

Or

(b) Explain briefly about the capability of Graphics class.

15. (a) Explain the use of file stream classes through examples.

Or

(b) Write an applet program and embed it in HTML code.

PART C — (3 × 10 = 30 marks)

Answer Any THREE questions.

16. Explain the features of E-mail account and email handling.

17. With illustrations, describe the operators and their use.

18. Explain inheritance concept and their types with necessary diagrams.

19. Explain the life cycle of a thread. Write a simple thread program.

20. Write a Java program to create a text file. Read the file, convert all lower case letters to uppercase and store it in another file.

———————

D–3193

Sub. Code
31551/34051

DISTANCE EDUCATION

M.C.A./M.C.A.(Lateral Entry) DEGREE EXAMINATION,
DECEMBER 2019.

Fifth Semester

Computer Application

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 is called packet in computer network?

2. Which layer in OSI reference model is concerned with transmitting raw bits in a communication channel?

3. What do you mean by Local loop?

4. What is meant by persistent CSMA?

5. What is the difference between circuit switching and packet switching?

6. What is Multicast routing?

7. What is the use of header checksum field in IP Header?

8. Write the differences between TCP and UDP.

9. What is called Transposition cipher?

10. Define the term Cryptanalysis.

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss on connection oriented and connectionless services.

Or

(b) Write short notes on Fibre optics.

12. (a) What are called Error correcting codes? Explain.

Or

(b) Brief on one-bit sliding window protocol.

13. (a) Explain various switching techniques in detail.

Or

(b) Describe the shortest path routing algorithm.

14. (a) Explain the steps involved in establishing a connection in Transport layer.

Or

(b) Write short notes on ICMP.

15. (a) Explain the need for network security.

Or

(b) Describe DES algorithm in cryptography.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Describe OSI reference model with neat sketch.

17. Explain the Multiple Access protocols.

18. Explain the following routing algorithms:
    (a) Flow based routing
    (b) Distance vector routing

19. Discuss on the following:
    (a) Remote Login
    (b) Remote File Access

20. Explain Transposition and Substitution ciphers with examples.

———————

D–3194

Sub. Code
31552/34052

DISTANCE EDUCATION

M.C.A/M.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Fifth Semester

Computer Applications

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term OLAP.

2. What is meant by data mining?

3. What is classification in data mining?

4. What are called internal node and terminal node in decision tree?

5. Expand the terms DBSCAN, CLARANS, ROCK,CACTUS

6. What is the concept of machine learning?

7. What are the uses of Weka and Rapid Miner tools?

8. What is meant by information retrieval?

9. Write the meaning of 3 V's in Big data.

10. What is meant by Big data?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe the purpose of data pre- processing in data mining.

Or

(b) Explain about the OLAP operations.

12. (a) How does classification works in data mining? Explain.

Or

(b) Write short notes on Decision tree induction.

13. (a) How can you relate the concept of neural network and data mining? Explain.

Or

(b) Write short notes on hierarchical clustering with suitable example.

14. (a) Describe the structure of webpage layout with suitable example.

Or

(b) How to discover the web user access patterns? Explain briefly.

15. (a) Describe the characteristics of Big data.

Or

(b) Explain about limitations of Hadoop.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss about the architecture and need of Data Warehousing.

17. Explain about apriori algorithm with its steps and suitable example.

18. Explain K-means cluster algorithm with its steps and suitable example.

19. Discuss on the importance of World Wide Web mining.

20. Explain about physical architecture of Hadoop and its applications.

———————

D–3195

Sub. Code
31553/34053

DISTANCE EDUCATION

M.C.A./M.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Fifth Semester

Computer Application

VISUAL PROGRAMMING WITH .NET

(CBCS — 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. What is Visual Studio?

2. What is the use of status bar?

3. Write a skeleton code for console application.

4. Define the term class snippet.

5. What is the use of interface snippet?

6. What is the use of startup object?

7. Define the term database.

8. What is called stored procedure?

9. Expand and write a note on the term WPF.

10. Write the purpose of MVC Objects.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

11. (a) Write short notes on :

(i) Menu

(ii) Toolbar

(iii) Work Area.

Or

(b) Briefly explain about Docking windows and Floating windows.

12. (a) Write short notes on the following :

(i) The main method

(ii) The program class.

Or

(b) With an example, explain how to declare and use fields.

13. (a) Write short notes on event.

Or

(b) How to rebuild and clean the solutions? Explain in detail?

14. (a) Explain the various step operations in using breakpoints.

Or

(b) How to relate tables with foreign keys? Explain.

15. (a) Write a program that reads and saves the data.

Or

(b) How to display the information in a Grid? Explain with program code.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

All questions carry equal marks.

16. Discuss the various types of visual studio projects.

17. Describe in detail about branching and looping.

18. How to use arrays and generics? Explain with example.

19. Discuss on various windows for viewing application state.

20. Elaborate various layout controls in WPF.

———————