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 × 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 × 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.

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PART C — (3 × 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.

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D–1549		Sub. Code
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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 × 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 × 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++.

D–1549

PART C — (3 × 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.

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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 × 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 × 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.

2 **D–1550**

PART C — (3 × 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.

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DISTANCE EDUCATION

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

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 the questions.

1.   Define the software process.

2.   What are the merits of incremental model?

3.   What do you mean by requirement elicitation?

4.   What is scenario-based modelling?

5.   Write down the user interface design process.

6.   What is design evaluation?

7.   Write down the principles of software testing.

8.   What are the various white box testing techniques?

9.   What is risk refinement?

10. What do you mean by statistical quality assurance?

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss on CMMI.

Or

(b) List the task regions in spiral model.

12. (a) Write short notes on Requirement Engineering.

Or

(b) Explain the objectives of analysis modelling.

13. (a) Discuss about software design notations.

Or

(b) List down the golden rules of user interface design.

14. (a) Explain Integration testing strategy.

Or

(b) Explain the various software metrics.

15. (a) Explain the various software risks.

Or

(b) Discuss the activities of Software Quality assurance.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the Evolutionary Software process models

17. Describe the software requirements specification analysis.

2   **D–1551**

18. Detail on User Interface Design.

19. Explain various testing strategies.

20. Discuss the ISO 9000 quality standards.

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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 × 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.

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PART C — (3 × 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.

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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 × 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 × 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.

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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.

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D–1553

DISTANCE EDUCATION

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

Third Semester

Computer Application

DISCRETE MATHEMATICS

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   State the truth values of "If tigers have wings then the earth travels round the sun".

2.   If A = {2,5,6} and B {3,4,2}. 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.   Let X = {2,3,6,12,24,36} and the relation $\leq$ be such that $x \leq y$ if x divides y. Draw the Hasse diagram of $(x,\leq)$

5.   Define one-one function and give an example.

6. Define hashing function.

7. Define Group.

8. Find all the left coset of $([0], [2])$ in $(Z_4 +_4)$

9. Define graph.

10. Three coins are tossed. Find the probability of getting atleast one head.

PART B — (5 × 5 = 25 marks)

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

11. (a) Construct the truth table for $\rceil (P \vee Q) \wedge (P \vee R)$

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) Let m be a positive integer greater than 1. Show that the relation $R = \{(a,b)|a \equiv b(mod\, m)\}$ is an equivalence relation on the set integers

Or

2   **D–1554**

(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 $R \cup S, R \cap S,$ $R \, oS, R \oplus S.$

13.   (a)   Show that the function $f(x) = x^3$ and $g(x) = x^{\frac{1}{3}}$ for $x \in R$ are inverse of one another

Or

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

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

Or

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

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

Or

(b)   If A and B are two events such that $P(A) = 1/3$ and $P(B) = 3/4$ and $P(A \cup B) = 11/12,$ then find $P(A|B)$ and $P(B|A).$

3   **D–1554**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Check whether the hypothesis "It is not sunny this afternoon and it is colder than yesterday", "we will go swimming only if it is sunny"," If we do not go swimming then we will take a canoe trip" and" If we take a canoe trip, then we will be home by sunset" lead to the conclusion "we will be home by sunset.

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. Explain the different types of functions.

19. (a) Prove that a group $G,*$ abelian iff $\left((a * b)^2 = a^2 * b^2 \right)$

(b) If $f : G \to G'$ be a homomorphism, then prove that the Ker (f) is a normal subgroup of G.

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

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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 × 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 × 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.

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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.

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DISTANCE EDUCATION

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

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 the main advantage of object oriented development?

2. How software verification is different form validation?

3. Name the models in objectory.

4. What is association role?

5. What is the purpose of analysis?

6. What is the common class pattern approach?

7. Write some characteristics of bad design.

8. Define the term Transaction.

9. What is a user satisfaction test?

10. Define the term client/server.

PART B — (5 × 5 = 25 marks)

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

11. (a) Write about the evolution of object model.

Or

(b) What is software development process? Explain briefly.

12. (a) What are the phases of OMT? Briefly describe each phase.

Or

(b) Bring out the difference between patterns and framework.

13. (a) Discuss on developing effective documentation.

Or

(b) Write short notes on super sub class relationships.

14. (a) Brief on designing methods and protocols.

Or

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

15. (a) Give a brief account on testing strategies.

Or

(b) Write short notes on foundation class library.

D–1556

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about classes and objects.

17. What are the different types of modeling? Briefly describe each.

18. Discuss in detail about classification.

19. Explain about view layer design.

20. Elaborate on coding and maintenance.

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DISTANCE EDUCATION

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

Fourth Semester

Computer Application

ACCOUNTING AND FINANCIAL MANAGEMENT

(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 objectives of accounting?

2. What is turnover ratio?

3. State any two advantages of cost accounting.

4. What is marginal costing?

5. Define standard costing.

6. What is zero-base budgeting?

7. What is present value of money?.

8. What is capital budgeting?

9.	What is weighted average cost of capital?

10.	What is dividend policy?

PART B — (5 × 5 = 25 marks)

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

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

Or

(b)	From the following particular calculate Stock Turnover Ratio:

	Rs.
Opening stock of finished goods	40,000
Purchases	1,20,000
Carriage on purchases	10,000
Sales	2,00,000
Closing stock of finished goods	30,000

12.	(a)	What are the various elements of cost?

Or

(b)	The following data are obtained from the records of a company.

	First year	Second year
Sales	80,000	90,000
Profit	10,000	14,000

Calculate the Break-even Point.

2	D–1557

13. (a) Prepare a Production Budget for three months ending 31st March 2009 for a factory producing four products on the basis of the following information:

Type of the Product	Estimate Stock on 1.12009	Estimated Sales during Jan-Mar 2009	Desired Closing Stock on 31.3.2009
	Units	Units	Units
A	8,000	40,000	12,000
B	12,000	60,000	20,000
C	16,000	52,000	12,000
D	12,000	48,000	8,000

Or

(b) Distinguish between standard costing and budgetary control.

14. (a) A project costs Rs 25,000 and has a scrap value of Rs 5,000 after 5 years The net profits before depreciation and taxes for the five years period are expected to be Rs.5.000.Rs.6,000 Rs.7,000, Rs.8000 and Rs.10.000. You are required to calculate the Accounting Rate of Return assuming 50% rate of tax and depreciation on straight line method

Or

(b) Explain the functions of financial managements.

15. (a) How would you compute cost of debt and cost of equity?

Or

(b) What are the different types of capital structure?

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. From the following comparative balance sheet of Kumarasamy Ltd as on June 30, 2006 and June 30. 2007 you are required prepare

    (a) A Statement of changes in working capital

    (b) Funds Flow Statement.

Liabilities	2006	2007	Assets	2006	2007
Share capital	1,80,000	2,00,000	Goodwill	24,000	20,000
Reserve Fund	28,000	36,000	Buildings	80,000	72,000
P and L A/c	39,000	24,000	Machinery	74,000	72,000
Trade creditors	16,000	10,800	Investments	20,000	22,000
Bank Overdraft	12,400	2,600	Inventories	60,000	50,800
Provision for taxation	32,000	34,000	Debtors	40,000	44,400
Provision for doubtful debts	3,800	42,00	Cash	13,200	30,400
	3,11,200	3,11,600		3,11,200	3,11,600

Additional information:

(i)   Depreciation charged on machinery was Rs,8,000 and on building Rs.8,000.

(ii) Interim dividend paid on January 2007 was Rs. 15,000

(iii) Provision of Rs. 10,000 was made for taxation during the year ending 30th June 2007.

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D–1557

17. From the following information relating to ABC Ltd. you are required to find out (a) Contribution, (b) Break-even Point in units, (c) Margin of Safety (d) Profit.

   Total Fixed Costs   Rs.4,500

   Total variable costs   7,500

   Total Sales   15,000

   Units Sold   5,000 units

   Also calculate the volume of sales to earn profit of Rs.6,000

18. Vignesh Enterprises a newly started company wishes to prepare cash budget from January Prepare a Cash Budget for the first six months from the following estimated revenue and expenses:

Month	Total Sales	Materials	Wages	Production	Overheads Selling and Distribution
	Rs.	Rs.	Rs.	Rs.	Rs.
January	20,000	20,000	4,000	3,200	800
February	22,000	14,000	4,400	3,300	900
March	28,000	14,000	4,600	3,400	900
April	36,000	22,000	4,600	3,500	1,000
May	30,000	20,000	4,000	3,200	900
June	40,000	25,000	5,000	3,600	1200

   Cash balance on 1st January was Rs.10.000 A new machinery is to be installed at Rs.20,000 on credit, to be repaid by two equal installments in March and April.

   Sales commission @ 5% on total sales is to be paid within a month of following actual sales.

D–1557

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

20. Describe the factors determining the dividend decision.

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DISTANCE EDUCATION

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

Fourth Semester

COMMUNICATION SKILLS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the mode of introducing a person?

2. What kind of language need to be employed in presentations?

3. Define communication.

4. What do you mean by peer group?

5. What are the two types communication?

6. What is memo?

7. What are the essential parts of a letter?

8. What is the purpose of using visual aids?

9. Whom do you call a good leader?

10. How would you express your disagreement?

PART B — (5 × 5 = 25 marks)

Answer each of the following questions, choosing
either (a) or (b).

11. (a) Analyse the essential elements to be include in the introductory part of presentation.

Or

(b) Bring out the advantages of using audio — visual aids in presentation.

12. (a) How would you prepare a resume?

Or

(b) Discuss the advantages and disadvantages of e – mail.

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

Or

(b) Explain the different levels of communication.

14. (a) Explain the varies modes of greetings.

Or

(b) What are the do's and don'ts of telephonic conversation?

15. (a) Explain behaviour pattern.

Or

(b) Bring out the importance of group communication.

D–1558

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the methods to be observed in making a presentation impressive?

17. Analyse the framework of a letter highlighting its essential parts.

18. Discuss the basic etiquettes of communication.

19. Examine the importance and significance of soft skills.

20. What are the essential qualities of a good leader?

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D–1558

DISTANCE EDUCATION

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

Fourth Semester

Computer Applications

INTERNET AND JAVA PROGRAMMING

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define the term Internet? Explain the type of internet connections.

2. What is Email? What are the advantages of using Email?

3. Write the syntax of conditional operator.

4. What is meant by Encapsulation?

5. What is the difference between constructor and other member methods?

6. What are wrapper classes?

7. Write an applet to display the name of your institute.

8. What is thread priority?

9. Write the two different ways to create a file.

10. What are the I/O exceptions available in Java?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss about chatting and conferencing on the internet.

Or

(b) How DNS works? Explain with its structure?

12. (a) How Java differs from C and C++? Explain.

Or

(b) Describe the different data types available in Java.

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

Or

(b) What is a vector class in Java? Explain with examples.

14. (a) Explain the life cycle of applet.

Or

(b) What are user-defined exceptions? Illustrate them with an example.

15. (a) Write a Java program to create a file for random access and performs seek operations at different locations in the file.

Or

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(b) Write a Java program to read an employee file. It contains the following data:

empno, empname, designation, BasicPay, LIC, PF loan, and IncomeTax.

(i) Calculate DA, HRA assuming your own formulas

(ii) Calculate Deduction (as sum of LIC, PF loan and IncomeTax)

(iii) Find Gross and Net Salary

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the following:

(a) Usenet Newsgroup

(b) Internet Relay Chat

17. Explain various decision making and looping statement in Java with suitable examples.

18. Discuss the methods available under String and String Buffer classes.

19. With the help of block diagram, explain the life cycle of a thread. Give an example program that uses thread.

20. Elaborate the various byte stream classes in Java.

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DISTANCE EDUCATION

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

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. Define the term topology.

2. What are the functions of OSI layers?

3. Write down the various fields of Frame.

4. What is ALOHA protocol?

5. What is meant by message switching?

6. Define the term flooding.

7. What is called congestion?

8. Write down the difference between TCP and UDP.

9. What do you mean by Remote logon?

10. What is the function of SNMP?

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss the applications of computer networks.

Or

(b) Write short notes on Guided transmission media.

12. (a) Write about Error detecting codes.

Or

(b) Explain sliding window protocol.

13. (a) Compare and contrast: Circuit switching vs Packet switching.

Or

(b) Explain the static routing algorithm with an example.

14. (a) Explain the merits of flow based routing.

Or

(b) Compare connection oriented and connectionless service.

15. (a) Write short notes on DNS.

Or

(b) Write down the procedure for Remote file access.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the OSI reference model with neat sketch.

17. Explain the various network topologies in detail.

18. Explain the design issues of Data link layer.

19. Explain the following routing algorithms :

    (a) Distance vector routing

    (b) Link state routing.

20. Discuss in detail about WWW.

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DISTANCE EDUCATION

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

Fifth Semester

Computer Application

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 called data extraction?

3. Define the terms root and leaf nodes in decision tree.

4. What is meant by Minimum support threshold in Apriori algorithm?

5. What do you mean by supervised learning?

6. Expand the term CLARA BRICH.

7. Define the term precision in text retrieval.

8. What do you mean by the term web log?

9. What is the job of Hadoop?

10. What is meant by data source in bigdata?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on meta data repository.

Or

(b) How Data warehousing differs from data mining? Explain.

12. (a) Explain about Market basket analysis method.

Or

(b) Describe the Decision tree representation and its structure.

13. (a) Explain about ROCK and CACTUS.

Or

(b) Describe Supervised learning with suitable example.

14. (a) Describe about web content parsing and crawling.

Or

(b) Describe the features of Matlab tools which are related to data mining.

15. (a) Describe the limitations of Hadoop.

Or

(b) Write short notes on characteristics of Big Data.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss about the architecture of Data warehousing with proper diagrams.

17. Explain in detail about Bayesian classification with suitable examples.

18. Explain in detail about supervised learning techniques and unsupervised learning techniques.

19. Discuss on web mining and its applications.

20. Explain about core components of Hadoop and its limitations.

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DISTANCE EDUCATION

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

Fifth Semester

Computer Applications

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1.   What is called as work area in visual studio?

2.   Write the uses of database project.

3.   List the branching statements in VB.Net.

4.   Write a simple program to demonstrate the use of "return" statement.

5.   What is interface snippet?

6.   Write the use of solution explorer.

7.   What is IntelliTrace?

8.   Write the procedure to connect a database with project application.

9. Write a note on Canvas Layout.

10. What is called Web service?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

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

Or

(b) Explain Solution Explorer and Status bar in Visual Studio.

12. (a) Make an overview on VS code editor.

Or

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

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

Or

(b) Discuss in detail about Assembly Referencing.

14. (a) Explain Debugging Breakpoints through examples.

Or

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

15. (a) Explain the desktop application layouts.

Or

(b) Discuss in detail about WCF service hosting.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Make detailed notes on Visual studio project types.

17. How to write and use methods in VB.Net? Explain.

18. Elaborate on Project Compilation in Visual Studio.

19. Discuss in detail about Application state inspection.

20. Explain in detail about Working with Data in WPF.

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DISTANCE EDUCATION

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

Sixth Semester

Computer Application

CLOUD COMPUTING

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   List out the characteristics of cloud computing.

2.   What are the services that can be accessed by Customers while using Skytap?

3.   Write the popular applications of cloud.

4.   What is the use of VMotion tool?

5.   What is resource bundling?

6.   Write about the difference between para virtualization and full virtualization.

7.   Write a note on Data Center.

8.   What is symmetric and asymmetric connection?

9. What is active directory?

10. How will you share online content in cloud?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain in detail the components of cloud.

Or

(b) Elaborate Cloud computing benefits and limitations.

12. (a) State and explain service models of cloud computing.

Or

(b) Discuss the pros and cons of cloud service development.

13. (a) Discuss on non-users of cloud computing.

Or

(b) What is the role of power managers in cloud resource scheduling and management? Explain briefly.

14. (a) List and explain various storage models of file systems and data base.

Or

(b) Explain the steps to share files in cloud architecture.

15. (a) Discuss on "Federation in cloud".

Or

(b) With neat diagram, explain Microsoft Windows Azure.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the architecture of cloud computing.

17. Discuss the following:

    (a) Collaborating on Grocery lists

    (b) Collaborating on contact lists

18. Describe the various cloud services.

19. Describe the process of collaborating word processing application in cloud.

20. Discuss the privacy issues of cloud architecture.

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DISTANCE EDUCATION

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

Sixth Semester

SOFT COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define Approximation.

2.   What is meant by Artificial Neuron?

3.   Define the term Perceptron.

4.   What is meant by CPN?

5.   Differentiate Fuzzy vs probability.

6.   What is the need for fuzzy logic?

7.   List the advantages of Fuzzy Arithmetic.

8.   Define Hedge.

9.   What is meant by Mutation?

10. Write a note on Encoding.

PART B — (5 × 5 = 25 marks)

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

11. (a) Differentiate between precise and approximation models.

Or

(b) Explain about Activation Function.

12. (a) Explain about Adaline Networks.

Or

(b) Write a note on Back Propagation Network.

13. (a) Write a note on Membership function.

Or

(b) Write a note on Fuzzy Tolerance.

14. (a) Explain about Fuzzy Decision Making.

Or

(b) Write a note on Fuzzy propositions.

15. (a) Write a note on Fitness function.

Or

(b) Write a note on Schema Theorem.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the various applications of soft computing.

17. Briefly explain about Kohonen Self Organising Network.

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18. Discuss in detail about Defuzzification methods.

19. Explain about Fuzzy Measures.

20. Discuss in detail about Applications of GA.

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DISTANCE EDUCATION

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

Sixth Semester

Computer Application

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 the types of big data.

2. Name the technologies available for big data.

3. Name the core hadoop components.

4. List the applications of nearest neighbour search.

5. What is data stream mining?

6. What are distinct elements in a stream?

7. What is meant by SPAM?

8. Why web pages need to be ranked?

9. Name any four social networks.

10. What is Social Graph?

PART B — (5 × 5 = 25 marks)

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

11. (a) What is Hadoop eco system? Explain briefly.

Or

(b) Bring out the limitations of Hadoop.

12. (a) With diagram, explain about software stack.

Or

(b) Illustrate map reduce operation through an example.

13. (a) What is data stream management? Explain briefly.

Or

(b) Brief on filtering streams.

14. (a) Write short notes on Link SPAM.

Or

(b) Explain briefly about collaborative filtering.

15. (a) How will you view social network as a Graph? Illustrate.

Or

(b) Write short notes on SIMRANK.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Compare and contrast tradition vs big data approaches.

17. Explain Map Reduce algorithm with an example dataset.

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18. Explain in detail about data stream mining.

19. Describe Topic-Sensitive Page ranking.

20. Explain in detail about clustering of social graphs.

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