D–4778	Sub. Code
	10113

DISTANCE EDUCATION

B.C.A. DEGREE EXAMINATION, DEC 2020.

First Semester

C AND DATA STRUCTURE

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. Define Tokens.

2. Write short notes on 'break' and 'continue' statements in C.

3. What are the functions of Macros?

4. Define Multidimensional array.

5. Define Union.

6. Define Command line parameters.

7. State the difference between Arrays and Linked List..

8. Define Linear data structure.

9. What is mean by tree traversing?

10. Define Binary Search Tree.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Write short notes on keywords.

Or

(b) What is 'switch' statement in C? Explain with example.

12. (a) Explain call by reference with example.

Or

(b) Write short notes on :

(i) Pointers with array

(ii) Pointers with string.

13. (a) Write short notes on Enumeration.

Or

(b) Explain data file and its operations.

14. (a) Explain in detail about operations of stack with examples.

Or

(b) What is the difference between circular linked list and circular queue?

15. (a) What is binary tree? Discuss the tree traversal approaches.

Or

(b) Explain different types of binary trees.

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

Answer any THREE questions.

16. Explain the various branching and looping statements in C with example.

17. Explain in detail the concept of arrays in C. Give example.

18. Describe in detail about structure with pointers with example.

19. Explain the operations on a linked list with examples.

20. Distinguish between linear and non-linear data structure. Give examples.

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D–4779	Sub. Code
	10123

DISTANCE EDUCATION

B.C.A. DEGREE EXAMINATION, DEC 2020.

Second Semester

PROGRAMMING IN C++

(CBCS 2018-19 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write the principal advantage of object oriented programming.

2. Define Identifiers.

3. List down the types of storage classes.

4. What is inline function?

5. What is meant by virtual function?

6. Define abstract class.

7. What is meant by file Input/Output streams?

8. List down any two error handling steps during file operations.

9. Give an example for Nesting of Function Calls.

10. What do you mean by uncaught exception?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write a note on Object Oriented Language.

Or

(b) Explain about function definition and declaration with an example.

12. (a) Define : Operators. What are the types of Operator?

Or

(b) Explain about constructor and destructor with an example.

13. (a) Define : Pointers. Explain it with an example.

Or

(b) Discuss about formatted console I/O operations.

14. (a) Describe about Random Access.

Or

(b) Brief a note on command line arguments with an example.

15. (a) Explain about templates with examples.

Or

(b) List down the rules for handling exceptions successfully.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain about control structures in C++.

17. Discuss about classes and objects with an example.

18. Elaborately write about Inheritance and its types.

19. Discuss about sequential input and output operations.

20. Illustrate the concept of exception handling.

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D–4780

Sub. Code
10133/12733

DISTANCE EDUCATION

B.C.A./B.C.A. (Lateral Entry) DEGREE EXAMINATION,
DEC 2020.

Third Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. Define : Schema.
2. What is meant by Instance? Give an example.
3. Define : DML.
4. State the syntax / query to create a table with four attributes.
5. What is meant by Referential Integrity?
6. Define : Inner Join.
7. Give examples of any four aggregate functions.
8. Define : 3NF.
9. What is meant by Exclusive lock in concurrent transactions?
10. Define : Binary trees.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) List any five features of Database System.

Or

(b) Discuss the concept of E-R model.

12. (a) Write a note on Keys.

Or

(b) Explain the correlated nested queries on tables with suitable examples.

13. (a) Discuss the usage of Set operations with example queries.

Or

(b) Explain the concept of dependency preserving decomposition.

14. (a) Explain the characteristics of valid transactions.

Or

(b) Write a note on Serializability.

15. (a) Discuss the concept of Hash based indexing.

Or

(b) Give an account on B^+ trees.

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

Answer any THREE questions.

16. Describe the characteristics of various data models.

17. Explain the operations on Relational Calculus with suitable queries.

18. Elaborate on various Normal forms with example.

19. Explain the working of Time stamp based protocols on concurrent transactions.

20. Describe about Indexed Sequential Access Methods.

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D–4781

Sub. Code
10143/12743

DISTANCE EDUCATION

B.C.A./B.C.A. (Lateral Entry) DEGREE EXAMINATION,
DEC 2020.

Fourth Semester

INTERNET AND JAVA PROGRAMMING

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. Define web browser.

2. Define Tel-net.

3. Write any four features of Java.

4. Define Token.

5. Define constructor.

6. How will you represent string in Java?

7. Define exception.

8. Write the types of error in Java.

9. What are the stream classes available in Java?

10. Write the syntax for reading and writing in a file.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Write the steps for chatting conferencing on the internet.

Or

(b) Discuss about Internet Relay Chat.

12. (a) Differentiate between C and C++.

Or

(b) Write short notes on Java Virtual Machine.

13. (a) How will you declare and initialize an array?

Or

(b) What is meant by nesting of methods? Explain with example.

14. (a) How to implement the runnable interface? Explain with example.

Or

(b) Write a Java program to draw barchart.

15. (a) Describe the concept of byte stream classes and character stream classes.

Or

(b) Describe in detail about Random access files in Java.

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

Answer any THREE questions.

16. Discuss in detail about E-mail communication.

17. Explain the decision making statements in Java. Give examples.

18. Define inheritance and explain its types with example.

19. Discuss about the life cycle of an Applet with neat diagram.

20. What are the two methods of opening a file? Explain with examples.

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D–4782	Sub. Code
	10151/12751

DISTANCE EDUCATION

B.C.A./B.C.A. (Lateral Entry) DEGREE EXAMINATION,
DEC 2020.

Fifth Semester

ACCOUNTING FUNDAMENTALS

(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 double entry system of book keeping?

2. What is an accounting equation?

3. What are the five major types of accounts?

4. What is difference between nominal and real account?

5. Differentiate journal from ledger.

6. What is a suspense account?

7. What is single entry?

8. How do you ascertain profit under single entry system?

9. What is a good ratio for current ratio?

10. Write a note on debt equity ratio.

PART B — (5 × 5 = 25 marks)

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

11. (a) What are the objectives of accounting?

Or

(b) What are the various classification of accounting?

12. (a) Bring down the limitations of accounting standards.

Or

(b) State the acconting conventions in detail.

13. (a) From the under mentioned balances, prepare a Trial Balance as on 31-03-2007.

	Rs.		Rs.
Opening Stock	35,000	Machinery	60,000
Salaries	20,000	Sundry Creditors	24,000
Sundry Debtors	50,000	Purchases	1,20,000
Wages	16,000	Cash	1,200
Sales	2,01,200	Furniture	15,000
Rent	10,000	Bills Receivable	20,000
Capital	1,00,000	Bills Payable	22,000

Or

(b) Pick out items relating to the Trading Account and construct a Trading Account for the year ending 31st March 2009.

2008		Rs.
April 1	Stock of goods	2,000
2009		
March 31	Purchases	7,000

Wages (Productive)	1,500
Freight on goods bought	750
Marine Inwards on purchase	250
Duty on goods imported	400
Salaries to clerks	1,200
Wages to office & shop assistants	300
Motive power	120
Carriage Inwards	75
Sales	15,000
Stock	3,000
Packing materials	200
Returns Inwards	400
Returns Outwards	300
Office Lighting	250

14. (a) What are the features of single entry system?

Or

(b) Describe the merits and limitations of single entry system.

15. (a) Calculate : (i) Current asset (ii) Liquid assets (iii) Inventory

Current ratio = 2.6 : 1

Liquid ratio = 1.5 : 1

Current liabilities = Rs.40,000

Or

(b) Calculate the current assets from the following information:

Quick ratio = 2 : 1

Inventory = Rs. 60,000

Total current liabilities = Rs. 1,20,000.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Distinguish between double entry and single entry system.

17. Explain the characteristics of international accounting standards and their implications for international business.

18. The following are the balances extracted from the books of Thiru. Gokulnath as on 31st December 2006. Prepare Trading, Profit and Loss account for the year ended 31st December 2006 and a Balance Sheet as on that date.

Debit Balance	Rs.	Credit Balance	Rs.
Opening Stock	20,000	Capital	1,00,000
Machinery	40,000	Purchase returns	1,000
Purchases	70,000	Sales	90,000
Sales returns	1,000	Creditors	29,000
Wages	2,000		
Salaries	5,000		
Office rent	2,000		
Insurance	1,000		
Debtors	50,000		
Cash	4,000		
Bank	25,000		
Total	2,20,000	Total	2,20,000

Adjustments :

(a) Closing stock is valued at Rs. 20,000.

(b) Outstanding salaries Rs. 1,000.

(c) Prepaid Insurance Rs. 500.

(d) Bad debts Rs. 1,000.

(e) Provide 10% depreciation on machinery.

19. Mr. X keeps his books under single entry system. From the following prepare trading and profit and loss account and balance sheet as on 31st March 2005.

Cash book analysis shows the following:

	Amount Rs.
Interest charges	100
Personal withdrawls	2,000
Staff salaries	8,500
Other business expenses	7,500
Payment to creditors	15,000
Balance at bank as on 31st March 2005	425
Cash in hand as on 31st March 2005	75
Received from Debtors	25,000
Cash sales	15,000

Further details available are:

	31.03.2004 Rs.	31.03.2005 Rs.
Stock on hand	9,000	10,200
Creditors	8,000	5,500
Debtors	22,000	30,000
Furniture	1,000	1,000
Office Premises	15,000	15,000

Provide 5% interest on X's capital balance as on 1st April 2004. Provide Rs.1,500 for doubtful debts 5% depreciation on all fixed assets. 5% group incentive commission to staff has to provided for an net profit after meeting all expenses and the commission.

20. From the following details, prepare a Balance Sheet with as many details as possible:

Stock Velocity	6
Capital Turnover Ratio	2
Fixed Assets Turnover Ratio	4
Gross Profit Ratio	20%
Debt Collection Period	2 month
Creditors Payment Period	73 days

The Gross Profit was Rs.60,000

Reserves and Surplus Rs.20,000

Closing Stock was Rs.5,000 in excess of opening stock

D–4783

Sub. Code
10152/12752

DISTANCE EDUCATION

B.C.A./B.C.A. (Lateral Entry) DEGREE EXAMINATION,
DEC 2020.

Fifth Semester

COMPUTER GRAPHICS

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List out any four input devices that are used in graphics field.

2. Define Flood-fill algorithm.

3. What is homogeneous coordinates?

4. Define View port.

5. What is mean by spline representation?

6. Define Shear Transformations.

7. Write about 2D Translation transformation.

8. What is clipping?

9. List out visible surface detection methods.

10. Define Key frame systems.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write short notes on :

(i) Video display devices

(ii) Application areas of computer graphics.

Or

(b) Explain any one output primitive based algorithms.

12. (a) Explain the various clipping operations.

Or

(b) Explain Hodgeman polygon clipping algorithm.

13. (a) Explain in detail about polygon rendering methods.

Or

(b) Discuss about basic illumination models.

14. (a) Write the various applications of 3-D viewing.

Or

(b) Explain in detail about composite transformations.

15. (a) Explain BSP tree methods.

Or

(b) Explain the features of motion specifications.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE of the following questions.

16. Explain in detail about filled area primitives and its types.

17. Discuss in detail about Cyrus-beck line clipping algorithms. How it differs from Cohen-Sutherland algorithm?

18. Explain 3-D object representation and its surfaces.

19. Explain the various 3-D geometric transformations with example.

20. Discuss in detail about design of animation sequence and give the advantages of raster animation.

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D–4784	Sub. Code
	10153/12753

DISTANCE EDUCATION

B.C.A./B.C.A. (Lateral Entry) DEGREE EXAMINATION,
DEC 2020.

Fifth Semester

Computer Applications

OPERATING SYSTEMS

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. What is meant by symmetric multiprocessing?

2. List out five categories of system calls.

3. Distinguish Job scheduler from CPU scheduler.

4. Define the term “Throughput”.

5. What is a semaphore?

6. Define : Safe State.

7. What is meant by external fragmentation?

8. Expand (a) LDT (b) GDT.

9. What is a relative block number of a file system?

10. Distinguish direct blocks from indirect blocks.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Give a note on system programs.

Or

(b) Write notes on Time sharing system and multiprogrammed systems.

12. (a) Narrate the basic concepts of CPU scheduling strategy.

Or

(b) Elucidate the concept of process scheduling that maximizes the multiprogramming in a CPU.

13. (a) Explain the process of deadlock prevention.

Or

(b) Discuss the dining-philosophers problem.

14. (a) Discuss the concept of single contiguous memory management technique.

Or

(b) Write about segmentation with paging scheme.

15. (a) Give a brief note on free space management.

Or

(b) Narrate the different types of file attributes with its operations.

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

Answer any THREE questions.

16. Write notes on :

    (a) Operating system services. (6)

    (b) Operating system design and implementation. (4)

17. Discuss the procedure of FCFS and SJF scheduling policies related to CPU.

18. Explain the Banker's algorithm with an example.

19. Give a neat description on paging technique with structure of the page table.

20. List out various allocation methods followed to utilize optimum disk space and explain any two of it.

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D–6409

Sub. Code
10161/12761

DISTANCE EDUCATION

BCA/BCA (Lateral Entry) DEGREE EXAMINATION,
DECEMBER 2020.

Sixth Semester

MANAGEMENT PRINCIPLES AND TECHNIQUES

(CBCS 2018-2019 Academic year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is delegation?

2. Give any two functions of management.

3. State the different types of models used in operations research.

4. State the purpose of Artificial variable.

5. When an assignment problem is said to be unbalanced?

6. Define : Critical activity.

7. What is cost slope?

8. Give any two reason for replacement.

9. What is present worth factor?

10. What is group Replacement?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe the elements of organisation structure.

Or

(b) Write about different types of leadership.

12. (a) Explain briefly the applications of OR.

Or

(b) Solve graphically the following LPP.

Maximize $z = 3x_1 + 2x_2$

Subject to the constraints :

$$-2x_1 + x_2 \leq 1$$
$$x_1 \leq 2$$
$$x_1 + x_2 \leq 3$$
$$x_1, x_2 \geq 0$$

13. (a) Draw the network :

$A < D, E; B, D < F; C < G, H; F < I$ and $G < I$.

Or

(b) Write a note on Resource levelling.

14. (a) What is a replacement problem? When does it arise?

Or

(b) A firm is considering replacement of a machine, whose cost price is Rs.12200 and the scrap value is Rs.200. The running costs in are found from experience to be as follows :

Year	1	2	3	4	5	6	7	8
Running cost :	200	500	800	1200	1800	2500	3200	4000

When should the machine be replaced?

15. (a) What do you mean by Reliability? How can you estimate it?

Or

(b) Derive the expression for the least cost associated with group replacement.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. What do you mean by motivation? Explain the different types of motivation.

17. Use duality to solve the following LPP :

Maximize $z = 2x_1 + x_2$

Subject to the constraints :

$x_1 + 2x_2 \leq 10$

$x_1 + x_2 \leq 6$

$x_1 - x_2 \leq 2$

$x_1 - 2x_2 \leq 1$

$x_1, x_2 \geq 0$

18. Draw the network and find the critical path.

Activity :	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-10	9-10
Time : (days)	4	1	1	1	6	5	4	8	1	2	5	7

19. The cost of a new machine is Rs.5,000. The maintenance cost of n^{th} year is given by $C_n = 500(n-1); n = 1, 2...$ suppose that the discount rate per year is 0.5. After how many years it will be economical to replace the machine by a new one.

20. A computer contains 10,000 resistors. When any resistor fails, it is replaced. The cost of replacing a resistor individually is Re.1 only. If all the resistors are replaced at the same time, the cost per resistor would be reduced to 35 paise. The percent surviving s(t) at the end of month t is given below :

t :	0	1	2	3	4	5	6
s(t) :	100	97	90	70	30	15	0

What is the optimum replacement plan?

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D–6410

Sub. Code
10162/12762

DISTANCE EDUCATION

B.C.A/B.C.A. (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2020.

Sixth Semester

SYSTEM ANALYSIS AND DESIGN

(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 elements of a system?

2. What academic qualifications are important for systems work?

3. What is the difference between validity and reliability?

4. What cost elements are considered in cost/benefit analysis?

5. State the purpose of HIPO chart.

6. Give the major approaches for entering data into the computer.

7. Give an example for one – to – many and one – to – one relationship.

8. Specify the purpose of system testing.

9. What is implementation?

10. What software criteria are considered for selection?

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe the interpersonal skills required for system analyst.

Or

(b) Describe the characteristics of a system.

12. (a) Distinguish between strategic and operational planning.

Or

(b) Explain the importance of decision table.

13. (a) Write about functional decomposition.

Or

(b) What are the devices available for output and explain.

14. (a) How files are organized is indexed – sequential organization?

Or

(b) Describe the factors that affect the quality of a system.

15. (a) Describe the training acids available for user.

Or

(b) Write the procedure for hardware selection.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the system development life cycle.

17. Describe any two fact finding techniques in detail.

18. What are the requirements of forms design and explain.

19. Describe the different types of databases.

20. Explain the role, elements and importance of software maintenance.

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D-6411

Sub. Code
10163/12763

DISTANCE EDUCATION

B.C.A./B.C.A. (Lateral Entry) DEGREE EXAMINATION,
DECEMBER 2020.

Sixth Semester

VISUAL BASIC PROGRAMMING

(CBCS 2018 – 19 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the use of Property Window?

2. How can you open code window?

3. What is the special of variant data types?

4. Name any two Indeterminate loop.

5. Describe Sgn( ) function.

6. Write the syntax for Line method.

7. Name any two kinds of component of Menu Editor.

8. Define MDI child form.

9. Define Record Set.

10. Expand OLE. Write its purpose.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write about Tool bars.

Or

(b) Describe Visual Basic Project Explorer Window.

12. (a) Explain various data types.

Or

(b) Discuss on select structure with an example.

13. (a) List out and explain various Numeric functions.

Or

(b) Fixed Versus Dynamic Arrays – Discuss.

14. (a) How to code Menu? Explain with examples.

Or

(b) Explain MDI form.

15. (a) List out and explain the various methods of Record Set.

Or

(b) How to connect with database? Explain.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Give an example for creating an Application in VB.

17. Write about Sub Procedure function.

18. Discuss about control arrays.

19. Explain Menu Editor.

20. Write in detail about ADO.

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