D–2959

Sub. Code
10113

DISTANCE EDUCATION

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

First Semester

C AND DATA STRUCTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Identifiers.

2. List out the control statements in C.

3. What is mean by recursion?

4. What is an array? How the array is declared with example?

5. Define structure with example.

6. Define data file.

7. What are primitive data types in C?

8. Define the terms Queue and Dequeue,

9. Define Binary Search Tree.

10. What is mean by Hashing Technique?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain different types of expressions with suitable example.

Or

(b) Explain any five operators with example.

12. (a) Write a C program to sort the given N numbers in ascending order.

Or

(b) Explain in detail about defining and accessing pointers.

13. (a) Explain how the structure is initialized with example?

Or

(b) Discuss about command line parameters with example.

14. (a) What are the various operations of queue? Explain with algorithm.

Or

(b) Discuss the Comparison of Linked List and Array.

15. (a) Explain the binary search tree traversal algorithms with examples.

Or

(b) What is hashing function? Explain its features.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss various data types available in C.

17. Explain string handling functions with suitable examples.

18. Explain array of structure with suitable examples.

19. Define singly link list. Explain the traversal and searching in single link list with algorithm.

20. Explain the various binary tree traversal methods with examples and diagram.

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D–2960

Sub. Code
10123

DISTANCE EDUCATION

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

Second Semester

PROGRAMMING IN C++

(CBCS 2018-2019 Academic year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define access specifier in C++.
2. What is the use of derived data types?
3. State the conditional operator in C++.
4. What is mean by constructor?
5. Mention the types of inheritance.
6. What is mean by virtual function?
7. Define abstract class.
8. Define File pointers.
9. What is mean by templates?
10. What are the rules of Exception handling?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the benefits of object oriented programming.

Or

(b) Explain inline function with example.

12. (a) Explain arrays within a class with example.

Or

(b) Explain member functions in C++.

13. (a) Explain the concept of virtual base classes.

Or

(b) Describe the formatted console I/O operations in C++.

14. (a) Explain sequential access in file pointers.

Or

(b) Describe open and close operation in file.

15. (a) Write short notes on.

(i) Function call

(ii) Overloaded function templates

Or

(b) Explain in detail about Exception handling model.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss in detail about operators in C++.

17. Explain with a program how to access the constructor and destructor in detail manner.

18. Write notes on:

    (a) Multi level inheritance

    (b) Multiple Inheritance

    (c) Hierarchical inheritance

19. Explain in detail about different types of file streams with example.

20. Describe about types of error handling during file manipulation.

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D–2961

Sub. Code
10133/12733

DISTANCE EDUCATION

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

Third Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define: Database.

2. What is meant by Entity? Give an example.

3. Define: DDL.

4. Classify the programers of Database System.

5. What is meant by Referential Integrity?

6. What are the different types of Joins?

7. List any four set operations.

8. Define: BCNF.

9. What is a Concurrent Transaction?

10. Define: B+ trees.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) List any five differences between File system and Database System.

Or

(b) Write a note on Data Abstraction.

12. (a) Explain the various integrity constraints.

Or

(b) Discuss the altering tables and views with suitable examples.

13. (a) Explain the usage of Aggregative operators with example queries.

Or

(b) Write a note on Lossless join decomposition.

14. (a) Discuss about the importance of Atomicity and Durability.

Or

(b) Write a note on Multiple Granularity.

15. (a) Explain about Cluster indexes.

Or

(b) Discuss the concept of Indexed Sequential Access Method (ISAM).

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the various DML statements with suitable examples.

17. Describe the operations with respect to Relational Algebra.

18. Elaborate on various Normal forms with example.

19. Explain the working of Lock based protocols.

20. Describe about performance tuning with respect to B+ trees.

D–2962

Sub. Code
10143/12743

DISTANCE EDUCATION

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

Fourth Semester

INTERNET AND JAVA PROGRAMMING

(CBCS – 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Internet.

2. Expand FTP.

3. What is meant by Java Virtual Machine?

4. Write any four operators available in Java.

5. Define class.

6. What is mean by Inheritance?

7. How applet differ from application?

8. Write the Syntax for drawing circle function.

9. Define file.

10. What is a character stream?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss about Internet Search Engine.

Or

(b) Write short notes on: Telnet.

12. (a) Describe briefly about command Line Arguments.

Or

(b) Write the syntax and example for switch statement in Java.

13. (a) Explain the constructor with example.

Or

(b) How to define and implementing interface?

14. (a) How to handle exception? Write the syntax of exception handling code.

Or

(b) Write the applet program to draw a national flag.

15. (a) Explain the stream classes in Java.

Or

(b) Write a java program to read and write characters to a file.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain briefly about Domain Name System (DNS).Give examples.

17. What is mean by looping? Explain the looping statements available Java programming with syntax and example.

18. Define Array and explain its types with syntax and example.

19. Write short notes on: Life cycle of thread with neat diagram.

20. What are the various ways of handling Input or Output Exceptions?

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D–2963

Sub. Code
10151/ 12751

DISTANCE EDUCATION

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

Fifth Semester

ACCOUNTING FUNDAMENTALS

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Management Accounting.
2. Mention any two objectives of Accounting.
3. What do you mean by Accounting Conventions?
4. Explain the term International Accounting Standards.
5. What do you mean by the term ledger?
6. What is a Trial Balance?
7. What is statement of affairs?
8. What is net worth method?
9. What is ratio analysis?
10. State any two advantages of ratio analysis.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the need of Accounting and its functions in modern business.

Or

(b) Discuss the advantages of management accounting.

12. (a) How do you classify accounting conventions?

Or

(b) Discuss the need of International Accounting Standards.

13. (a) Journalise the following transactions in the books of Shri. Raja.

	Rs.
Sold goods for cash	15,000
Purchased goods for cash	10,000
Sold goods to Mr. Amar	25,000
Purchased goods from Mr. Balan	30,000
Paid Salary	5,000
Paid rent to Shri. Raman the land lord	4,000

Or

(b) Prepare a Trial Balance from the following as on 31.12.2017 :

Particulars	Rs.
Capital	19,000
Furniture	22,000
Purchases	18,000
Sales	22,000

Particulars	Rs.
Sundry debtors	22,000
Bank overdraft	10,000
Salary outstanding	11,000
Stock on 1.1.2007	12,000
Sales returns	14,000
Sundry creditors	18,000
Bills payable	8,000

14. (a) Shri. Rajan started his business on 1.1.2017 with a capital of Rs. 12,500. His capital as on 31.12.2017 was Rs. 15,000. During the year, he introduced a further capital of Rs. 1,250 and withdrew from the business for his private use Rs. 2,000. Find out his profit for the year 2017.

Or

(b) From the following particulars find out net credit purchases :

	Rs.
Opening balance of Sundry creditors	40,000
Payment by cheques	2,35,000
Payment by bills payable	25,000
Payment in cash	5,000
Discount received	2,500
Purchase returns	5,000
Closing balance of Sundry creditors	47,500

15. (a) Wise Ltd. provides you the following information :

	Rs.
Debtors on 1.1.2017	30,000
Debtors on 31.12.2017	40,000
Provision for bad debts	1,500
Sales return	5,000
Total sales	3,50,000
Cash sales	1,00,000
No.of working days in a year	360

Compute :

(i) Debtor's turnover ratio

(ii) Average collection period.

Or

(b) Following information is given to you :

(i) Current ratio = 2.5

(ii) Working capital = Rs. 90,000

Find out :

(1) Current assets

(2) Current liabilities.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the advantages of Cost Accounting.

17. Enumerate the accounting concepts which guide an accountant in the recording stage.

18. From the following Trial Balance of Shri. Rajan, prepare the Trading and Profit and Loss Account for the year ended 31.3.18.

Particulars	Debit Rs.	Credit Rs.
Rajan capital		29,000
Drawing	760	-
Purchases and sales	8,900	15,000
Sales returns and purchase returns	280	450
Stock on 1.4.17	1,200	
Wages	800	
Buildings	22,000	
Carriage on purchase	2,000	
Trade expenses	200	
Advertisement	240	
Interest	-	350
Taxes and Insurance	130	
Debtors and Creditors	6,500	1,200
Bills receivable and payable	1,500	700
Cash at bank	1,390	
Salaries	800	
	46,700	46,700

Adjustments :

(a) Stock on 31st December March 2018 was valued at Rs. 1,500

(b) Insurance prepaid Rs. 40

(c) Outstanding salaries Rs. 200 and taxes Rs. 130

(d) Depreciate building at 2% p.a.

19. Shri. Kumaran keeps his books under single entry system. On 1.1.2017 his capital was Rs. 69,000. An analysis of his cash book for the year gives the following particulars :

Receipts	Rs.	Payments	Rs.
Received from debtors	60,000	Due to Bank (1.1.2017)	7,400
Paid on capital a/c	5,000	Payment to creditors	25,000
		General expenses	10,000
		Wages	15,500
		Drawings	3,000
		Balance at bank	4,000
		Balance in hand	100
	65,000		65,000

The following were his assets and liabilities.

	1.12017 Rs.	31.12017 Rs.
Debtors	53,000	88,000
Creditors	15,000	19,500
Stock	17,000	19,000
Plant	20,000	20,000
Furniture	1,400	1,400

From the above particulars prepare Trading and Profit and Loss a/c and Balance Sheet as on 31.12.2017 after providing interest on capital at 5%, depreciation on furniture at 5%, depreciation on plant at 10% and a reserve of 5% on debtors.

20. From the following information, prepare a Balance Sheet:

(a)	Current ratio	2.5
(b)	Liquid ratio	1.5
(c)	Fixed assets/proprietary funds	0.75
(d)	Working capital	Rs. 60,000
(e)	Reserve and surplus	Rs. 40,000
(f)	Bank O/D	Rs. 15,000
(g)	There is no long term loan or fictitious assets.	

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D–2964

Sub. Code
10152/ 12752

DISTANCE EDUCATION

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

Fifth Semester

Computer Applications

COMPUTER GRAPHICS

(CBCS 2018 – 19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Distinguish between bitmap and pixmap.

2. Define the approach of flood-fill algorithm.

3. What is meant by shift vector?

4. What is a region code with respect to clipping?

5. Define the term, “Second order parametric continuity”.

6. What is an uniform B-spine curve? Give an example.

7. Define : Orthographic parallel projection.

8. What is meant by view reference point?

9. What is morphing?

10. What are Key frame systems?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the working principles of Joystick and mouse.

Or

(b) Give a note on boundary fill algorithm.

12. (a) Derive the rotational transformation matrices, both for clock-wise and anti-clockwise notations.

Or

(b) Discuss on window-to view-port coordinate transformations concept.

13. (a) Compare and contract parametric continuity conditions with geometric continuity conditions.

Or

(b) Write notes on :

(i) Gourand shading

(ii) Phong shading.

14. (a) Elucidate the process of rotational transformation with quaternions.

Or

(b) Give a note on views volumes and general projection transformations.

15. (a) Discuss the design of animation sequences and computer animation languages.

Or

(b) Write about depth-buffer method with algorithm.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Give a neat description on Cathode Ray tube with its working principles.

17. Explain the Cohen-Sutherland line clipping techniques in deal with program segment.

18. Narrate the concept of polygon surfaces in detail.

19. Explain the different types of projections in detail.

20. Summarize the concept of Keyframe systems.

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D–2965

Sub. Code
10153/12753

DISTANCE EDUCATION

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

Fifth Semester

OPERATING SYSTEMS

(CBCS — 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define operating system.

2. What is mean by system calls?

3. Distinguish between multiprogramming and time sharing.

4. What is mean by process scheduling?

5. Define Synchronization.

6. What is meant by deadlock?

7. Define swapping.

8. Define memory.

9. Define file.

10. What is a directory?

PART B — (5 × 5 = 25 marks)

Answer ALL questions

11. (a) Describe briefly about operating system services.

Or

(b) Write short notes on operating system operations.

12. (a) Explain the two fundamental model of inter process communication.

Or

(b) Explain briefly about multiple processor scheduling.

13. (a) What is a semaphore? Explain busy waiting semaphores

Or

(b) Distinguish between deadlock prevention and deadlock avoidance.

14. (a) Write short notes on paging.

Or

(b) Discuss the concept of segmentation. What is the main problem with segmentation?

15. (a) Explain briefly about directory.

Or

(b) Write short notes on disk structure.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Write short notes on computer system organisation

17. Explain briefly about pre-emptive SJF Scheduling algorithm with example.

18. Define deadlock? Explain the necessary condition for deadlock occurs.

19. Describe in detail about contiguous memory allocation

20. Explain in detail about Disk scheduling

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