D–4768	Sub. Code
	13013

DISTANCE EDUCATION

B.Sc. DEGREE EXAMINATION, DEC 2020.

First Semester

Computer Science

PROGRAMMING IN C

(CBCS 2018-19 Academic year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. Define tokens.
2. Define symbolic constant.
3. Syntax of Do While statement.
4. What is meant by Dynamic array?
5. What is recursion?
6. Differentiate between structures and functions.
7. What is pointer?
8. Define Initialization of pointer.
9. Write input operations of file.
10. Define error handling.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Importance of C language.

Or

(b) Note on precedence of arithmetic operators.

12. (a) Reading and writing character with suitable examples.

Or

(b) Write a note on one dimensional array and two dimensional arrays with example.

13. (a) Explain about user defined function and it types.

Or

(b) Note on the structure.

14. (a) Uses of chain of pointers with example.

Or

(b) Explain pointers and structure.

15. (a) Explain I/O operations on file.

Or

(b) What are command line arguments with syntax?

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Briefly explain about Basic structure of C Programme?

17. What is array? Define it types with examples.

18. Write a brief note about Structure and Union.

19. Explain in detail pointers.

20. Explain error handling methods in detail.

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D–4769	Sub. Code
	13023

DISTANCE EDUCATION

B.Sc. DEGREE EXAMINATION, DEC 2020.

Second Semester

Computer Science

OBJECT ORIENTED PROGRAMMING AND C++

(CBCS 2018-19 Academic year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. Define Class.
2. Define Manipulators.
3. What are the different types of access specifier?
4. What is inline function?
5. Types of inheritance.
6. Rules for virtual function.
7. What is function template?
8. Syntax for opening and closing file.
9. Define Exception mechanism.
10. Define Destructors.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Evolution of OOP.

Or

(b) Write a note on unformatted input output operations.

12. (a) Note on call by reference.

Or

(b) Define this pointer. Examples.

13. (a) Write short note on binary operator overloading.

Or

(b) Explain Multiple base class inheritance.

14. (a) Write a note on Standard Template Library.

Or

(b) Explain function template.

15. (a) Differentiate between exception as classes and exception as objects.

Or

(b) Note on exception temporaries.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the basic concepts of object oriented programming.

17. Explain the following constructors :

    (a) Explicit constructors

    (b) Parameterized constructors

    (c) Multiple constructors

18. Briefly explain about virtual and pure virtual function.

19. Explain the file pointer and file manipulator.

20. Discuss exception handling in C++.

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D-4770

Sub. Code
13033/ 13233

DISTANCE EDUCATION

B.Sc. (Computer Science)/ B.Sc. (CS)(Lateral entry)DEGREE EXAMINATION, DEC 2020.

Third Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Time Complexity.

2. What is an Array?

3. Define Queue.

4. What are the applications of Stack?

5. Define the term tree.

6. What are different types of Binary trees?

7. Define linear search.

8. List out the uses of hashing techniques.

9. State the divide and conquer method.

10. Define selection sort.

PART B — (5 × 5 = 25 marks)

Answer ALL the Questions choosing either (a) or (b)

11. (a) Give detailed notes on primitive data types.

Or

(b) List and explain about the different types of array.

12. (a) Write an algorithm for Stack operation.

Or

(b) Compare the single and double linked list.

13. (a) Write about the evaluation of expression polish notion.

Or

(b) Give notes on Binary tree representation.

14. (a) Write an algorithm binary search tree.

Or

(b) Explain about Hashing technique in detail.

15. (a) What is Radix sort? Explain.

Or

(b) Write an algorithm for merge sort.

PART C — (3 ×10 = 30 marks)

Answer any THREE questions.

16. Define data structure. Briefly explain any one of its types.

17. Elaborate the circular queue data structure with its operations.

18. Explain about the insertion and deletion operation of binary tree.

19. Write down the procedures for in order, pre order and post order traversals with an example.

20. Illustrate quick sort algorithm with an example.

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D-4771

Sub. Code
13043/13243

DISTANCE EDUCATION

B.Sc (CS)/ B.Sc (CS) (LATERAL ENTRY) DEGREE EXAMINATION, DEC 2020.

Fourth Semester

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 JIT.
2. What is meant by Byte code?
3. What is the use of Assignment operator?
4. Which is conditional statement is used for exit control loop?
5. Define method overloading.
6. What is meant by inner class?
7. Define the role of string in java programming.
8. Write a note on multi threading.
9. How can you run a applet program?
10. What is the use of destroy ( ) method?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write a simple java program with the use of Type casting input.

Or

(b) Write a note tokens in Java

12. (a) Explain about arithmetic operators with suitable example.

Or

(b) Write a program using nested if statement.

13. (a) What is meant by dynamic array? Write a program using vector classes.

Or

(b) Explain about the types of arrays with example.

14. (a) What is the need for exception handling? Explain.

Or

(b) Explain about import and export of packages.

15. (a) Explain about lines and its methods.

Or

(b) Write a simple applet program to draw a circle.

PART C — (3 ×10 = 30 marks)

Answer any THREE questions.

16. Discuss about the history of Java and its features.

17. Discuss the uses of Switch statement with neat example.

18. Explain about extending interfaces.

19. Explain in detail about Multi threading with example.

20. Briefly explain about Graphics classes with example.

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D-4772

Sub. Code
13051/13251

DISTANCE EDUCATION

B.Sc. (Computer Science)/ B.Sc (CS) Lateral entry DEGREE EXAMINATION, DEC 2020.

Fifth Semester

OPERATING SYSTEMS

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Components.
2. What is operating system?
3. What is Semaphores?
4. Define mutual exclusion
5. Define Deadlock.
6. Define Deadlock avoidance.
7. What is Real memory?
8. What is page replacement?
9. What is file systems?
10. What is File Access Control?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on Interrupts.

Or

(b) Explain the Process Management.

12. (a) Explain Software solution to the mutual exclusion problem.

Or

(b) Discuss about the concurrent programming.

13. (a) What are the conditions for Deadlock?

Or

(b) Explain Preemptive Vs Non preemptive scheduling priorities.

14. (a) Give a brief note on memory organization.

Or

(b) Explain Contiguous Vs non-contiguous Memory Allocation.

15. (a) List the different Disk scheduling strategies and explain with suitable example.

Or

(b) Explain Disk rotational optimization.

PART C — (3 ×10 = 30 marks)

Answer any THREE questions.

16. Explain the process states and process management in OS.

17. Elaborate on mutual exclusion.

18. Explain the detail about Dijkstra's Algorithm.

19. Bring out the significance of virtual memory management.

20. Explain the file and database systems.

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D–4773

Sub. Code
13052/13252

DISTANCE EDUCATION

B.Sc. (CS)/B.Sc. (Lateral Entry). DEGREE EXAMINATION, DEC 2020.

Fifth 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. What is Database Management Systems?

2. What is a Transaction?

3. What are Integrity Constraints?

4. Define Tuple Relational Calculus.

5. What are Null values?

6. What is a Trigger and its three parts?

7. What is meant by Isolation?

8. What is meant by Buffer Management?

9. Define Indexing.

10. What is meant by Tree base Indexing?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain in detail about the Database Languages.

Or

(b) Discuss in detail about the ER model with examples.

12. (a) Describe in detail about Logical database design.

Or

(b) What is the difference between Tuple relational calculus and domain relational calculus?

13. (a) Explain in detail about AND, OR and NOT in Logical Connectives.

Or

(b) Discuss in detail about Outer Join.

14. (a) Describe in detail about Transaction Concept.

Or

(b) Discuss in detail about Remote Backup systems.

15. (a) What are the similarities and differences between Extendible hashing and Linear hashing?

Or

(b) Write in short notes following terms :

(i) Search

(ii) Insert.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about relationships and relationship sets.

17. Give detail notes on Selection and projection set operations.

18. Discuss in detail about 1NF, 2NF, 3NF.

19. Discuss in detail about Timestamp Based Protocol.

20. Describe in detail about Index data structure.

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D–4774

Sub. Code
13053/13253

DISTANCE EDUCATION

B.Sc. (CS)/B.Sc. (Lateral Entry) DEGREE EXAMINATION, DEC 2020.

Fifth Semester

Computer Science

COMPUTER ARCHITECTURE

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What are the five classic components of a computer?

2. Define Addressing Mode.

3. What is meant by Pipelining?

4. Define ILP.

5. What is meant by Loop Unrolling?

6. Define Software Speculation.

7. Differentiate SRAM from DRAM.

8. What are the steps to be taken in an instruction Cache Miss?

9. Define Process and Thread in the context of multiprocessor.

10. Why Symmetric Shared Memory Architecture is called as UMA?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe about different types of operands in MIPS. Give examples.

Or

(b) Explain the various instruction types.

12. (a) What are the disadvantages of increasing the number of stages in Pipelined Processing?

Or

(b) Discuss Dynamic Scheduling.

13. (a) Discuss the IA 64 and Itanium Processor.

Or

(b) Explain about branch prediction strategies.

14. (a) Illustrate the characteristics of some common Memory Technologies.

Or

(b) Discuss any six ways of improving the Cache Performance.

15. (a) What are the two main approaches to Hardware Multithreading?

Or

(b) Write a short notes on Asynchronous and Synchronous DRAMs.

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

Answer any THREE questions.

16. Discuss the following :

    (a) MIPS

    (b) TM32.

17. Explain in detail the limitations of ILP with a special mention on realizable processors.

18. Briefly explain about Instruction Level Parallelism with software approaches.

19. Explain with a neat diagram, the interfacing of Storage devices to the CPU.

20. With relevant graphs, discuss the performance of Distributed Shared Memory Multiprocessor.

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D–6406

Sub. Code
13061/13261

DISTANCE EDUCATION

B.Sc. (CS)/B.Sc. (Lateral entry) DEGREE EXAMINATION, DECEMBER 2020.

Sixth Semester

Computer Science

COMPUTER NETWORK

(CBCS 2018–19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Computer Networks.

2. Write the difference between LAN and MAN.

3. What is Error Detection?

4. Define the term CSMA.

5. Define Packet Switching.

6. What is Routing?

7. What are the uses of TCP?

8. Define File Transfer.

9. Define Cryptography.

10. What are the steps to select private and public keys?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short note on computer network applications.

Or

(b) Give a short note on LAN.

12. (a) Explain in detail about Error correcting codes.

Or

(b) Define Framing. Explain the types of Framing.

13. (a) Explain in detail about shortest path routing.

Or

(b) Write short notes on Circuit Switching.

14. (a) Give a brief note on multiplexing and de multiplexing.

Or

(b) Explain in detail about connectionless and connection oriented service.

15. (a) Write short notes on Data Encryption Standards(DES).

Or

(b) Give a brief note on security services.

PART C — (3 × 10 = 30 marks)

Answer any THREE of the following

16. Discuss in detail about the OSI Reference Model.

17. Explain in detail about the CSMA and CSMA / CD.

18. Give a brief note on state routing algorithm.

19. Explain in detail about UDP.

20. Discuss about the RSA algorithm.

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D–6407

Sub. Code
13062/13262

DISTANCE EDUCATION

B.Sc. (CS)/ B.Sc. (CS) (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2020.

Sixth Semester

Computer Science

VISUAL BASIC 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 GUI.

2. What is Variable? Give an Example

3. What is Event?

4. Define Text Box.

5. What is Menu?

6. What is Field? Give the Correct Example of Field.

7. What is DAO?

8. What is Menu Editor?

9. Define the term Database.

10. What is OLE DB?

PART B — (5 × 5 = 25 marks)

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

11. (a) Visual Basic Programming is an Event Driven Programming Language. How?

Or

(b) Explain the Uses of Command Button Control.

12. (a) Explain the Control Arrays with an Suitable examples.

Or

(b) Write Notes on List View Control.

13. (a) Explain about the Tool Bar Control.

Or

(b) Explain the Following Looping Structure with neat Example.

(i) Do — While

(ii) For...Next

14. (a) Write a notes on the Method of OLE DB.

Or

(b) Describe about ADO Object Model.

15. (a) Explain about ODBC(open Data Base Connectivity)

Or

(b) Describe about Dynamic Record set with suitable examples.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Explain the Followings with suitable Examples.

    (a) If and Else....If Statement

    (b) Select Case Structure

17. Describe about Various Types Arrays with Suitable examples.

18. Explain Slider Control? Give an Example of Slider Control.

19. Explain the File System Controls with an example.

20. Describe about Data Access Model (DAO).

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D–6408

Sub. Code
13063/13263

DISTANCE EDUCATION

B.Sc. (Computer Science/Computer Science (Lateral Entry)
DEGREE EXAMINATION, DECEMBER 2020.

Sixth Semester

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : 3 hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List the various capability levels of CMMI process area.
2. Mention the five framework activities of PSP model.
3. List out the ways of resolving the conflicts in requirements.
4. Mention the use of use case diagram.
5. What is meant by architecture?
6. List out the principles for data specifications.
7. Mention the characteristics of software testing Strategies.
8. List out the measures used for software quality testing.
9. What are the seven principles of Risk Management?
10. Mention the use of ISO 9000 quality standards.

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short note on process patterns.

Or

(b) Explain Water fall model with diagram.

12. (a) Discuss the methods to validate the requirements with examples.

Or

(b) Discuss Data Modeling concepts.

13. (a) Discuss the various architectural style used in Architectural design.

Or

(b) Explain Theo Mandel's "Golden Rules".

14. (a) Write short note on "System Testing".

Or

(b) Write a note on the metrics used for the Analysis model.

15. (a) Explain Risk Identification in detail.

Or

(b) Write a note on software reliability.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain any two Evolutionary process models with examples.

17. Discuss the various task involved in Requirements Engineering.

18. Explain the fundamental design concept of software engineering with example.

19. Discuss "Integration Testing" in detail.

20. Explain the following.

    (a) Software Quality Assurance

    (b) Software Reviews.

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