D–2952

Sub. Code
13013

DISTANCE EDUCATION

B.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2019.

First Semester

PROGRAMMING IN C

(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 Procedural Programming.

2. List the Fundamental Data Types.

3. What is the Significance of Printf( ) and Scanf( ) functions?

4. Define the Exit( ) Function.

5. What is call by value?

6. What do you mean by Recursion?

7. Define the term Pointer.

8. Write the specifications for malloc( ) and calloc( ) memory allocation.

9. What are the two ways of storing data in standard files?

10. Define File Structure.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe the concept of Structured Programming with neat Sketch.

Or

(b) Discuss about String Constants and Symbolic Constants.

12. (a) Explain the use of Break, Contine and Goto Statements with proper example.

Or

(b) Explain about Library functions used for String Handling in 'C'.

13. (a) Describe about Recursion Function with proper illustration.

Or

(b) Describe about Declaring and Processing a Structure in 'C' language.

14. (a) Define Pointer. How will you declare an Integer Pointer? Explain briefly.

Or

(b) Discuss the pointer notation for arrays.

15. (a) What is File Copy? Explain briefly with example.

Or

(b) Discuss the measures to avoid errors during file processing.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the Structure of C Program with neat Sketch and Proper Illustration.

17. Write a C program to add two matrices.

18. Explain in detail about the return values and their types with proper illustration.

19. Discuss in detail about accessing an variable through its pointer with proper illustration.

20. With proper illustration, explain in detail about Formatted I/O with files.

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D–2953	Sub. Code
	13023

DISTANCE EDUCATION

B.Sc. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Computer Science

OBJECT ORIENTED PROGRAMMING AND C++

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Differentiate Procedure oriented Programming from Object oriented.

2. Give the structure of a C++ program.

3. Specify the uses of scope resolution operator and give its syntax.

4. Define constructor.

5. List the operators that cannot be overloaded.

6. What is pure virtual function?

7. Write the syntax for Class template.

8. Define file pointers.

9. Write the syntax for try-catch mechanism.

10. How to handle uncaught exception?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the hierarchy of console stream classes.

Or

(b) Write short notes on evolution of object oriented language.

12. (a) Write a program to find area of triangle using inline function.

Or

(b) Explain the parameterized constructor.

13. (a) Write a program for Multilevel Inheritance.

Or

(b) List the rules for operator overloading.

14. (a) Explain the function template.

Or

(b) Write about random access file.

15. (a) Distinguish between synchronous and asynchronous exception.

Or

(b) Explain exception in operator overloaded functions.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain about the basic concepts of object oriented programming.

17. Write a C++ program to prepare mark list for 'n' number of students.

18. Illustrate the concept of function overloading suitable example.

19. Write a C++ program to add two numbers using function template.

20. Discuss about exception handling with example.

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D–2954

Sub. Code
13033/13233

DISTANCE EDUCATION

B.Sc.(CS)/B.Sc.(CS)(Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Computer Science

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions

1. Differentiate between data type and data structures.

2. Define algorithm.

3. Identify the types of expression and convert the two into infix representation.

   (a) $* - A / BC - AKL$

   (b) $PQ + R + S \uparrow UV + *$

4. Give any two real world examples of Queue.

5. What are the tasks performed during postorder traversal?

6. List out the applications of binary tree.

7. Define binary search.

8. What are the advantages of binary search over linear search?

9. Write down complexity of bubble sort and in which situation bubble sort should be used?

10. Illustrate whether bubble sort performs better than quick sort?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write a short note on Time and Space complexity of the algorithms.

Or

(b) Discuss the Characteristics of an Array with example.

12. (a) Explain how to evaluate the expression with examples.

Or

(b) Discuss the various applications of Queue.

13. (a) Discuss how binary tree is represented in memory. Explain with example.

Or

(b) Write short note on binary Search Tree with example.

14. (a) Explain linear search in detail with an example.

Or

(b) Identify the differences between linear search algorithm and binary search algorithm. Explain it with an example

15. (a) Write short note on insertion sort with algorithm.

Or

(b) Trace the steps of insertion sort for the values 12, 19, 33, 26, 29, 35, 22. Construct the total number of comparisons made during sorting.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Define Array. Explain how the two dimensional arrays and Multi dimensional arrays can be represented in memory with examples?

17. Explain the implementation of stack and the various operations performed on the stack with algorithm and example.

18. Discuss the various operations that can be performed in binary tree. Explain them with algorithm and examples.

19. Discuss the binary search algorithm in detail with an example.

20. Explain quick sort algorithm with example.

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D–2955

Sub. Code
13043/13243

DISTANCE EDUCATION

B.Sc. (Computer Science)/B.Sc. (CS) (LE) DEGREE EXAMINATION, DECEMBER 2019.

Fourth Semester

JAVA 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 web browsers?

2. What is class and instance of a class?

3. What is the function of Java Virtual Machine?

4. What is meant by Operator?

5. What is Encapsulation?

6. Write the difference between break and continue statements in Java.

7. Define Package.

8. What is the use of Runnable Interface.

9. Define Delegation Event Model.

10. Write the uses of Adapter Class.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write a note on different data types in Java.

Or

(b) Explain the features of OOP's.

12. (a) Explain overloading in Java.

Or

(b) What is inheritance? Is multiple Inheritance supported by Java? Justify.

13. (a) Explain how to use a particular package in a Java program. Give example.

Or

(b) Describe an interface? How is it implemented?

14. (a) Describe complete life cycle of thread.

Or

(b) Explain the difference between multiprocessing and multithreading.

15. (a) Differentiate between java applet and Java application.

Or

(b) Describe any four methods from graphics class.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the features of Java.

17. Define an array. How do you declare and create array objects?

18. State the bitwise operators in Java. Explain any Two.

19. Explain the following terms with respect to exception handling:

    (a) Try/Catch

    (b) Throw

    (c) Finally

    (d) Throws

20. Write a method in Java applet to display a circle.

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D–2956

Sub. Code
13051/13251

DISTANCE EDUCATION

B.Sc (Computer Science)/B.Sc(CS) (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. What is an Operating System?
2. What are the Components of the Computer System?
3. Write a short note on mutual exclusion.
4. Define Semaphores.
5. Define Deadlock.
6. What is Deadlock Recovery?
7. What is memory management?
8. What is page fault frequency?
9. What is Disk scheduling staategis?
10. What is File Allocation?

PART B — (5 × 5 = 25 marks)

Answer ALL the questions

11. (a) Explain the Process states and Process management on OS.

Or

(b) Explain the operating system Architecture.

12. (a) Explain about Explain about implementing mutual exclusion Primitives.

Or

(b) Explain detail about the Concurrent programming

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

Or

(b) Explain about Dijikstra's Algorithm.

14. (a) Explain the Hierarchy Management strategies.

Or

(b) Explain Fixed Partition multiprogramming.

15. (a) Explain about Disk Performance.

Or

(b) Explain in detail File Optimization and File Allocation.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Bring out the significance of interrupts and Inter process Communication.

17. Explain the S/W AND H/W solution to the mutual exclusion Problem.

18. Discuss about Preemptive Vs Non preemptive scheduling priorities.

19. Explain Contiguous Vs Non-Contiguous Memory Allocation.

20. Elaborate on the File and Database Systems.

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D–2957

Sub. Code
13052/13252

DISTANCE EDUCATION

B.Sc. (Computer Science)/B.Sc. (CS) (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Fifth Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS

(CBCS 2018 – 19 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define database system.

2. What is Schema?

3. Define the terms Arity and Degree of a relation.

4. What are integrity constraints?

5. What is null value?

6. Define trigger.

7. What is transaction?

8. Define timestamp based protocol.

9. What is clustered index?

10. Define B+ tree.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Narrate the roles of database administrator.

Or

(b) Write a short note on the database languages.

12. (a) How can you translate an ER diagram into SQL statements to create tables? Explain.

Or

(b) With suitable example explain the selection and projection operations.

13. (a) Explain the basic form of SQL query.

Or

(b) Explain set comparisons operators.

14. (a) Narrate the properties of Transaction.

Or

(b) Write a short note on remote back up systems.

15. (a) Explain the tree based index.

Or

(b) Explain the structure of B+ tree.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the different types of data models.

17. Discuss several variants of the join operation.

18. Explain the aggregate operators in detail.

19. Explain lock based protocol.

20. Discuss the indexed sequential access method.

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D–2958

Sub. Code
13053/13253

DISTANCE EDUCATION

B.Sc.(Computer Science) / B.Sc. (CS) (Lateral Entry) DEGREE EXAMINATION, DECEMBER 2019.

Fifth Semester

COMPUTER ARCHITECTURE

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is response time?

2. Define MIPS.

3. What is synthetic benchmark?

4. What is data dependences?

5. What is ILP?

6. What is VLIW?

7. What is miss rate?

8. Define RAID.

9. What is thread?

10. Define synchronization.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the processor performance equation.

Or

(b) Narrate the addressing modes.

12. (a) Briefly explain the data hazards.

Or

(b) Explain the limitations of ILP.

13. (a) Explain instruction level parallelism.

Or

(b) Write a short note on software speculation.

14. (a) Write a short notes on cache performance.

Or

(b) Briefly explain the types of storage devices.

15. (a) Explain the multithreading.

Or

(b) With the aid of diagram explain the distributed shared memory architecture.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Elaborately explain Amdahl's law.

17. Describe the Hardware based speculation.

18. Explain Compiler techniques for ILP.

19. Discuss RAID levels in detail.

20. Explain the models of memory consistency in detail .

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