D–2017	Sub. Code
	51711

DISTANCE EDUCATION

DIPLOMA IN COMPUTER APPLICATIONS EXAMINATION, MAY 2026.

First Semester

PRINCIPLES OF INFORMATION TECHNOLOGY

(CBCS 2020 – 2021 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. List the different types of data.

2. What is the Global Positioning System (GPS)?

3. Mention any two applications of computers in the healthcare sector.

4. Define virtual memory.

5. What are the uses of spreadsheet?

6. What is a database?

7. Define the term firewall.

8. What is a protocol?

9. Differentiate between the Internet and the World Wide Web.

10. Define messaging in the context of computer networks.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain how raw data is processed into meaningful information using software.

Or

(b) Write a note on the vital role of Information Technology in modern business and industry.

12. (a) Explain why computers are important in modern society, with examples from three different sectors.

Or

(b) Write short note on secondary storage devices and their types.

13. (a) Describe the role of communication software in education.

Or

(b) Explain how word processing software helps to improve the quality of documents.

14. (a) What are the different types of firewalls? Explain how they help secure a network.

Or

(b) Write a brief notes on the Metropolitan Area Network (MAN).

15. (a) Discuss the roles of web browsers and web servers in the operation of World Wide Web.

Or

(b) Explain messaging and describe the different types of messaging systems used today.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss in detail the concept of system software and its types.

17. Explain in detail the functions of memory and its various types.

18. Describe the features and functions of presentation software with examples.

19. Discuss the different types of network topologies with neat diagrams, and mention their advantages and disadvantages.

20. Elaborate on the Domain Name System (DNS) and its importance in networking.

———————

D–2018	Sub. Code
	51712/22412

DISTANCE EDUCATION

COMMON FOR DIPLOMA IN COMPUTER APPLICATIONS & CERTIFICATE PROGRAMMING IN WEB DESIGNING EXAMINATION, MAY 2026.

First Semester

OPEN SOURCE SOFTWARE

(CBCS 2020 – 2021 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Mention any two open source licenses.
2. What is meant by software freedom?
3. What is the purpose of the **init** process in Linux?
4. What is a signal in Linux?
5. Write a basic SQL statement to display all the records from a table.
6. What does the LIKE operator do in SQL?
7. Mention any two data types supported by PHP.
8. Name any two string functions in PHP.
9. What does die( ) function do in PHP?
10. Write the syntax to connect PHP code with a MySQL database.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the basic principles that define open source software.

Or

(b) Explain the evolution and growth of open source software and its impact on global software development.

12. (a) Write short notes on the Linux Kernel architecture.

Or

(b) Describe the purpose and usage of the clone( ) system call.

13. (a) Describe the use of NOW( ), CURDATE( ) and DATEDIFF( ) functions in MySQL.

Or

(b) Discuss how metadata can help database administrators manage databases.

14. (a) Write a PHP program to check whether a number is even or odd using control statements.

Or

(b) What are regular expressions? Demonstrate pattern matching using preg_match( ).

15. (a) Describe how to send an email using the mail( ) function in PHP.

Or

(b) Describe how to debug a PHP application using error_reporting( ) and var_dump( ).

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the applications of open source software in various domains like education, business and government with real-time examples.

17. Explain the process management of Linux in detail, including kernel/user mode, scheduling, and signals.

18. Discuss the use of sequences and auto-increment features in MySQL. Explain how they help in generating unique keys. Support your answer with code examples.

19. Explain the use of arrays and functions in PHP with a program that calculates the average of values stored in an array using a user-defined function.

20. Describe PHP error handling techniques in detail.

———————

D–2019	Sub. Code
	51713

DISTANCE EDUCATION

DIPLOMA IN COMPUTER APPLICATION EXAMINATION, MAY 2026.

First Semester

OFFICE AUTOMATION

(CBCS 2020 – 2021 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is the purpose of AutoCorrect in MS-Word?

2. What is list in MS-Word?

3. What is cell in MS-Excel?

4. How do you add a new worksheet in MS-Excel?

5. What is the purpose of sorting data in MS-Excel?

6. How can you move a chart from Excel to a Word document?

7. List out any two features of MS PowerPoint.

8. What does hiding a slide do during a presentation?

9. What is the purpose of the Find feature in MS-Access?

10. How do you set a primary key in Design view?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on spell and grammar check in MS-Word.

Or

(b) Explain the terms:

(i) Macros

(ii) Nested lists

12. (a) Explain the different ways to move through cells in MS-Excel worksheet.

Or

(b) Discuss any two ways to format date and time in Excel cells.

13. (a) What is Auto Fill in MS-Excel? Explain in detail.

Or

(b) Explain how to add clip art and images from a file to a worksheet in MS-Excel.

14. (a) Write the steps to add audio and video in a PowerPoint presentation.

Or

(b) What is Custom Slide Show in PowerPoint? Explain how to create and present a Custom Slide Show.

15. (a) Explain the steps involved in creating a database using Access Database Wizard.

Or

(b) Discuss the process of adding and deleting columns in an Access table.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain text formatting features in MS-Word.

17. Explain various cell formatting options in MS-Excel.

18. Describe the process of creating a chart using the Chart Wizard in MS-Excel.

19. What are color schemes in PowerPoint? Explain how do you apply and customize color schemes.

20. Explain the different types of queries and provide examples of how each can be used.

———————

D–2020

Sub. Code
51721

DISTANCE EDUCATION

DIPLOMA IN COMPUTER APPLICATIONS EXAMINATION, MAY 2026.

Second Semester

DIGITAL LOGIC FUNDAMENTALS

(CBCS 2020 – 21 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Convert $(27)_8$ to binary.

2. Convert $(1011)_2$ to decimal.

3. What is combinational circuit?

4. What is Logic gate? Mention any two basic gates.

5. Define Sum of Products (SOP) with an example.

6. Define minterm and maxterm.

7. What is half adder? State its logic expression.

8. Differentiate between multiplexer and demultiplexer.

9. Mention the functions of a flip-flop?

10. What are called binary codes?

PART B – ($5 \times 5 = 25$ marks)

Answer ALL Questions, Choosing either (a) or (b)

11. (a) Differentiate differences between ASCII and EBCDIC codes?

Or

(b) Convert the decimal number $(125)_{10}$ to binary, octal, and hexadecimal.

12. (a) Write a note on half adder draw its circuit and truth table.

Or

(b) Describe in brief about DeMorgan's theorem using truth tables.

13. (a) Discuss briefly about SOP and POS forms and Compare.

Or

(b) What is two-level implementation? Explain with one SOP and one POS example.

14. (a) Briefly explain the working of a full adder with logic diagram and truth table.

Or

(b) Explain how demultiplexer works with a suitable example.

15. (a) What is a shift register? Explain any one type with block diagram.

Or

(b) Discuss about the working of D flip-flop using truth table and circuit diagram.

PART C – ($3 \times 10 = 30$ marks)

Answer any THREE Questions.

16. Describe in detail, to convert numbers with suitable examples from:

    (a) Binary to Decimal

    (b) Decimal to Binary

    (c) Binary to Hexadecimal

    (d) Hexadecimal to Binary

17. Give a detailed note on the fundamental laws and theorems of Boolean algebra with examples.

18. Explain the differences between:

    (a) K-map and Quine-McCluskey method

    (b) Manual and software-based simplification techniques

19. Describe in detail the working of a 4-to-1 multiplexer and how it can be used to implement any Boolean function.

20. Discuss the following,

    (a) Fixed point representation,

    (b) Floating point representation.

———————

D–2021	Sub. Code
	51722

DISTANCE EDUCATION

DIPLOMA IN COMPUTER APPLICATIONS EXAMINATION, MAY 2026.

Second Semester

PROGRAMMING IN C

(CBCS 2020 – 21 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are called C Tokens?

2. Name any two data types in C.

3. Give the syntax of Input statement in C.

4. What is the purpose of GOTO statement?

5. Which string handling function is used to copy one string into another?

6. Mention the elements of User defined functions.

7. How many values that a function can return?

8. Give the syntax for declaring a Structure in C.

9. What is a Pointer?

10. Write down the commands to open and close data files.

PART B – (5 × 5 = 25 marks)

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

11. (a) Outline the basic structure of a C program.

Or

(b) Explain the syntax for defining symbolic constants and declaring a variable as a constant.

12. (a) Explain else if ladder with suitable example.

Or

(b) Explain the syntax for two dimensional array declaration, initialization and access. Provide examples.

13. (a) How will you read and write strings? Illustrate with examples.

Or

(b) Explain the code for function definition and function call.

14. (a) Explain array of Structures.

Or

(b) Differentiate between Structure and Union.

15. (a) How will you access a variable through its pointer? Explain it with a sample code.

Or

(b) Explain the I/O operations on files.

PART C – (3 × 10 = 30 marks)

Answer any THREE questions

16. Describe the operator precedence and evaluation of arithmetic expressions.

17. Explain the Looping statement in C with suitable example.

18. Write a C program to sort N numbers in ascending order.

19. Write a C program to find the factorial of a given number using recursion.

20. Explain the concept of Structures and functions with suitable example.

———————

D–2022	Sub. Code
	51723

DISTANCE EDUCATION

DIPLOMA IN COMPUTER APPLICATIONS EXAMINATION, MAY 2026.

Second Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2020 – 21 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List out the various types of Data structure.

2. How will you calculate time complexity of an algorithm?

3. Define the term array.

4. Mention the stack operations .

5. What do you mean by Circular Queue?

6. Differentiate Singly Linked List and Doubly Linked List.

7. What is a Binary tree?

8. Write down the Hashing techniques.

9. What are the various types of searching?

10. Differentiate between Linear search and Binary search.

PART B – (5 × 5 = 25 marks)

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

11. (a) Discuss about Primitive Data types.

Or

(b) Outline the characteristics of an Array.

12. (a) Discuss the applications of Stack.

Or

(b) Illustrate the representation of Queues.

13. (a) Explain the algorithm for Singly Linked List.

Or

(b) Explain the procedure for insertion and deletion of elements in a Linked list.

14. (a) Illustrate the procedure for Binary tree representation.

Or

(b) List and explain the operations on Binary tree.

15. (a) Compare and contrast linear search and binary search in terms of best, average, and worst-case complexities.

Or

(b) Trace the steps in binary search for the element 25 in the sorted list: [5, 10, 15, 20, 25, 30, 35, 40].

PART C – (3 × 10 = 30 marks)

Answer any THREE questions

16. Illustrate the time complexity and space complexity of algorithms with an example algorithm.

17. Explain the steps in evaluation of Polish notation of an arithmetic expression using stack.

18. Describe the procedure in traversing a Linked list.

19. Illustrate Binary search tree operations and procedures.

20. Explain the working of linear search algorithm with an example.

———————