C–4523	Sub. Code 80513

B.Sc. DEGREE EXAMINATION, APRIL 2025.

First Semester

IT & Logistics

PROGRAMMING IN C

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 1 = 10)

Answer **all** questions.

1. All keywords in C are in _____.

   (a) LowerCase letters

   (b) UpperCase letters

   (c) CamelCase letters

   (d) None of the mentioned

2. Which is valid C expression?

   (a) int my_num = 100,000;

   (b) int my_num = 1,00,000;

   (c) int my num = 1,000;

   (d) int $my_num = 10,000;

3. What is an example of iteration in C?

   (a) for (b) while

   (c) do-while (d) all of the mentioned

4. Which keyword is used to come out of a loop only for that iteration?

(a) break (b) continue

(c) return (d) none of the mentioned

5. Which of the following is a correct format for declaration of function?

(a) return-type function-name(argument type);

(b) return-type function-name(argument type){}

(c) return-type (argument type)function-name;

(d) all of the mentioned

6. Can we use a function as a parameter of another function? [Eg: void wow(int func())].

(a) Yes, and we can use the function value conveniently

(b) Yes, but we call the function again to get the value, not as convenient as in using variable

(c) No, C does not support it

(d) This case is compiler dependent

7. What are the applications of a multidimensional array?

(a) Matrix-Multiplication

(b) Minimum Spanning Tree

(c) Finding connectivity between nodes

(d) All of the mentioned

8. Which among the given options compares almost n characters of string ch to strings?

(a) int strncmp(ch, s, n)

(b) int strcmp(ch, s)

(c) int strncmp(s, ch, n)

(d) int strcmp(s, ch)

9. Which of the following cannot be a structure member?

(a) Another structure

(b) Function

(c) Array

(d) None of the mentioned

10. What is the function of the mode w+'?

(a) create text file for writing, discard previous contents if any

(b) create text file for update, discard previous contents if any

(c) create text file for writing, do not discard previous contents if any

(d) create text file for update, do not discard previous contents if any

Section B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Briefly explain the character set in C programming.

Or

(b) List out the rules for naming the identifiers.

12. (a) Discuss the working of switch statement with suitable example.

Or

(b) Write note on if-else statement with suitable example.

13. (a) Explain automatic and external storage classes in C.

Or

(b) Write a C program to explain call-by-reference parameter passing technique.

14. (a) Write a 'C' program to find largest number from an array of 10 numbers.

Or

(b) Write a 'C' program to accept two strings from user. Display length of both the strings. Also concatenate two strings and display the output.

15. (a) Explain the various operations that are allowed to perform on Pointers in C language.

Or

(b) Why we use file in 'C' Language? Explain the Operating modes of files.

Section C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write short notes on:

(i) variables (ii) statements

Or

(b) Write note on Arithmetic operators, Increment and Decrement Operators.

17. (a) Write a program to read three values using scanf function and print the following results:

(i) Largest of the three

(ii) Average of the three values.

Or

(b) Explain different types of loops in C syntax and example.

18. (a) Differentiate between Actual parameter and Formal parameter. Write a program in C to find out GCD of two numbers using function.

Or

(b) Explain the purpose of a function prototype. And specify the difference between user-defined function and built-in functions.

19. (a) Explain multidimensional array with suitable example.

Or

(b) Write a C program to find transpose of a given matrix.

20. (a) Assume there are two files first.txt and second.txt. Write a C program to merge the contents of two files into a new file third.txt.

Or

(b) Write a C program using structures to prepare the students mark statement. The number of records is created based on the user input.

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C–4524	Sub. Code
	80515

B.Sc. DEGREE EXAMINATION, APRIL 2025.

First Semester

IT & Logistics

MATHEMATICS – I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 1 = 10)$

Answer **all** questions.

1. If $x = \cos\theta + i\sin\theta$, then the value of $x^n + \frac{1}{x^n}$ = _____.

(a) $\cos n\theta$ (b) $2\cos n\theta$

(c) $\sin n\theta$ (d) $2\sin n\theta$

2. The expansion of $\sin\theta$ = _____.

(a) $\theta - \frac{\theta^3}{3!} + \frac{\theta^5}{5!} - \ldots$ (b) $\theta + \frac{\theta^3}{3!} + \frac{\theta^5}{5!} - \ldots$

(c) $1 - \frac{\theta^2}{2!} + \frac{\theta^5}{4!} - \ldots$ (d) None

3. A relation R is said to be symmetric if aRb, then _____.

(a) aRa (b) bRb

(c) aRb (d) bRa

4. Let A be a finite set of size n. The number of elements in the power set of A is.

(a) n^2 (b) 2^n

(c) $2n$ (d) $2n^2$

5. A square matrix A is said to be symmetric if _____.

(a) $AA^T = I$ (b) $AA^T = 0$

(c) $A = -A^T$ (d) $A = A^T$

6. The characteristic roots of $\begin{pmatrix} 3 & 0 & 0 \\ 5 & 4 & 0 \\ 3 & 6 & 1 \end{pmatrix}$ are.

(a) 3,5,3 (b) 3,4,1

(c) 4,6,0 (d) 0,0,1

7. If one root of the equation $x^3 - 3x^2 + 4x - 2 = 0$ is $1 - i$ then other imaginary root is _____.

(a) $-1 + i$ (b) $1 + i$

(c) $-1 - i$ (d) i

8. If α, β, γ are the roots of $x^3 + 2x - 6 = 0$, then the value of $\alpha\beta\gamma$ is_____.

(a) 0 (b) 2

(c) 6 (d) –6

9. The n^{th} derivative of e^{ax+b} is _____.

(a) $a^n \ e^{ax}$ (b) $a^n \ e^{x+b}$

(c) $a^n \ e^{ax-b}$ (d) e^{ax}

10. A curve is concave upward if _____ is positive.

(a) $\frac{d^2y}{dx^2}$ (b) $\frac{d^2x}{dy^2}$

(c) $\frac{dy}{dx}$ (d) None of these

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Solve approximately $\sin\left(\frac{\pi}{6} + \theta\right) = 0.51$.

Or

(b) Evaluate $\lim_{\theta \to 0} \frac{\tan\theta - \sin\theta}{\theta^3}$.

12. (a) Let $A = \{1,2,3,4\}$ and $R = \{(1,2), (2,3), (3,3), (3,4), (4,2)\}$ be a relation defined on A. Find the transitive closure of R.

Or

(b) Let $S = \{a, b, c\}$. Draw the Hasse diagram of $(P(S), \subseteq)$.

13. (a) Prove that $\begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$ is orthogonal.

Or

(b) If $A = \begin{pmatrix} 1 & 2 & 1 \\ 0 & 1 & -1 \\ 3 & -1 & 1 \end{pmatrix}$, then show that $A^3 - 3A^2 - A + 9I = 0$.

14. (a) Show that the roots of the equation $x^3 + px^2 + qx + r = 0$ are in Arithmetical progression if $2p^3 - 9pq + 27r = 0$.

Or

(b) Increase by 2 the roots of $x^4 - x^3 - 10x^2 + 4x + 24 = 0$ and hence solve the equation.

15. (a) Find $\frac{dy}{dx}$ if $x^3 + y^3 = 3axy$.

Or

(b) Find y_n, when $y = \frac{x^2}{(x-1)^2(x+2)}$.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Express $\cos 8\theta$ in terms of $\sin\theta$.

Or

(b) Expand $Sin^3\theta\, Cos^5\theta$ in a series of sines of multiples of θ.

17. (a) Prove that the relation $R = \{(x,y)/x,\ y \in N, (x-y)\ is\ divisible\ by\ 5\}$ is an equivalence relation in the natural numbers N.

Or

(b) In an examination 77% of the students passed in English and 80% passed and 80% in Mathematics; 65% passed in both. What percentage of the students failed in both?

18. (a) Solve the following system by Cramer's rule

$$x + y + 2z = 4$$
$$2x - y + 3z = 9$$
$$3x - y - z = 2$$

Or

(b) Verify Cayley Hamilton theorem for the matrix $A = \begin{pmatrix} 1 & 0 & -2 \\ 2 & 2 & 4 \\ 0 & 0 & 2 \end{pmatrix}$, find A^{-1} and A^4.

19. (a) Solve $x^4 - 2x^3 + 4x^2 + 6x - 21 = 0$, given that two of its roots are equal in magnitude but opposite in sign.

Or

(b) Solve $x^5 + 4x^4 + x^3 + x^2 + 4x + 1 = 0$.

20. (a) If $y = \sin(m \cos^{-1} x)$, then prove that $(1-x)^2 y_2 - xy_1 + m^2 y = 0$.

Or

(b) Find the shortest and longest distance from the point $(1, 2, -1)$ to the sphere $x^2 + y^2 + z^2 = 24$.

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C–4525	Sub. Code
	80516

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

IT & Logistics

PROBLEM SOLVING TECHNIQUES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A $(10 \times 1 = 10)$

Answer **all** questions.

1. What is the first step in problem solving process?

   (a) Plan (b) Do

   (c) Check (d) Action

2. Which of the following is not an operator in C?

   (a) , (b) sizeof ( )

   (c) ~ (d) None of the mentioned

3. Which of the following operation is illegal in structures?

   (a) Typecasting of structure

   (b) Pointer to a variable of the same structure

   (c) Dynamic allocation of memory for structure

   (d) All of the mentioned

4. The size of a union is determined by the size of the _____.

(a) First member in the union

(b) Last member in the union

(c) Biggest member in the union

(d) Sum of the sizes of all members

5. What is the purpose of the '–>' operator in C when used with pointers?

(a) Arithmetic operation

(b) Indirection operator

(c) Member access operator

(d) Bitwise operation

6. If the mode includes b after the initial letter, what does it indicates?

(a) text file (b) big text file

(c) binary file (d) blueprint text

7. What is the use of function char *sfrchr(ch, c)?

(a) return pointer to first occurrence of ch in c or NULL if not present

(b) return pointer to first occurrence of c in ch or NULL if not present

(c) return pointer to first occurrence of ch in c or ignores if not present

(d) return pointer to first occurrence of c in ch or ignores if not present

8. What is an algorithm?

(a) A data structure used to store information

(b) A sequence of steps to solve a problem

(c) A programming language

(d) A type of computer hardware

9. When an algorithm is written in the form of a programming language, it becomes a _____?

(a) Flowchart (b) Program

(c) Pseudo code (d) Syntax

10. What will be the output of the following C code?

```
#include <stdio.h>

void main( )

{

    char *s = "hello";

    char *p =  s;

    printf ("%p\t%p", p. s);
}
```

(a) Different address is printed

(b) Same address is printed

(c) Run time error

(d) Nothing

Section B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the steps involved in problem solving? Explain.

Or

(b) How to pass array to function? Explain.

12. (a) Explain about array of structures with example program.

Or

(b) Write short note on anonymous union and structure in C.

13. (a) Define pointer. How to declare arid initialize it? Explain.

Or

(b) Explain the following string handling functions with example:

(i) strcpy ( )

(ii) strcmp ( )

(iii) strcat ( )

(iv) strlen ( )

(v) strncat( )

14. (a) Define algorithm. Write algorithm for finding factorial of a number.

Or

(b) Write an algorithm for calculating the sum of numbers.

15. (a) Write an algorithm to find the given number is prime number or not.

Or

(b) Write an algorithm to remove the duplicate element from an ordered array.

Section C

$(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) How to create an algorithm? Explain with suitable example.

Or

(b) Explain the looping statement in C with example programs.

17. (a) Discuss on preprocessor directives.

Or

(b) What is a structure? Create a structure with data members of various types and declare two structure variables. Write a program to read data into these and print the same.

18. (a) With proper examples explain different arithmetic operations on pointers.

Or

(b) Write a C program to copy the contents from one file to another file.

19. (a) Write an algorithm to count the number of characters in a string.

Or

(b) Write an algorithm to sort the elements of an array in ascending order using insertion sort.

20. (a) Write an algorithm for raising a number to a large power.

Or

(b) Write an algorithm to reverse an array.

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C–4526	Sub. Code
	80523

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Second Semester

IT and Logistics

OBJECT ORIENTED PROGRAMMING IN C++

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 1 = 10)$

Answer **all** questions.

1. Which of the following is the smallest element of a C++ program?

   (a) Token (b) Compiler

   (c) Syntax (d) None of the above

2. "OOPS" stands for.

   (a) Object-Oriented Programming System

   (b) Object oriented procedure system

   (c) Object oriented procedure structure

   (d) None of the above

3. Which of the following, a user-defined data type, which holds its own data members and member functions?

   (a) Object (b) Class

   (c) Methods (d) None of the above

4. Which of the following, operators and functions that are declared as members of a class?

(a) Static functions

(b) Member functions

(c) Static member function

(d) None of the above

5. Which of the following is used to initialize an object of the class and assign values to data members corresponding to the class?

(a) Destructor (b) Constructor

(c) Static member (d) None of the above

6. Which of the following are symbolic representations of addresses?

(a) Pointers (b) Constructor

(c) Destructor (d) Array

7. Which of the following is a feature or a process in which, new classes are created from the existing classes?

(a) Polymorphism (b) Inheritance

(c) Data hiding (d) Object

8. Which of the following offer a way to save space and avoid ambiguities in class hierarchies that use multiple inheritances?

(a) Virtual base classes

(b) Base class

(c) Virtual memory

(d) None of the above

9. Which of the following is a flow of data into or out of a program?

(a) Stream (b) Class

(c) Input (d) Array

10. Which of the following are special functions that can be included in the I/O statement to alter the format parameters of a stream?

(a) Manipulators (b) Constructor

(c) Destructor (d) None of the above

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the various application of OOP.

Or

(b) Illustrate the various Data types with example.

12. (a) Discuss the general structure of Class and object with example.

Or

(b) Describe the inline function with example.

13. (a) Explain the concept of Constructor with example.

Or

(b) Discuss about command line arguments with example.

14. (a) Write about inheritance and its types with example.

Or

(b) Discuss the importance of virtual base class with example.

15. (a) Explain streams and stream classes with example.

Or

(b) Write brief about manipulators with example.

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss the Various operators and expressions with example.

Or

(b) Illustrate the control structures with example.

17. (a) How defining member function? Explain its types with example.

Or

(b) Describe the concept of function overloading with example.

18. (a) Explain operator overloading with example.

Or

(b) Discuss the importance of pointers with example.

19. (a) Discuss the concept of access specifiers and its types with example.

Or

(b) Illustrate about Virtual functions and pure virtual function with example.

20. (a) Discuss the features of Unformatted I/O operations with example.

Or

(b) Elaborate the importance of exception handling.

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C–4527	Sub. Code
	80524

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Second Semester

IT and Logistics

PRINCIPLES OF INFORMATION TECHNOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following the external and internal devices and equipment that enable you to perform major functions such as input, output, storage, communication, processing, and more?

   (a) Hardware (b) Software

   (c) Firmware (d) None of the above

2. Which of the following an extensive and comprehensive process by which various parts of a specific network connect with one another?

   (a) Network connectivity

   (b) Physical connectivity

   (c) CPU

   (d) None of the above

3. Which of the following, software designed to handle specific tasks for users?

   (a) System software

   (b) Hardware

   (c) Application software

   (d) None of the above

4. Which of the following is an application for accessing websites?

(a) Web browser (b) Web tools

(c) Navigator (d) None of the above

5. Which of the following is simply a type of communication that allows users to connect virtually and discuss business meetings or internal?

(a) Voice communication

(b) Video Communication

(c) Verbal communication

(d) None of the above

6. Which of the following is a branch of applied ethics that examines moral, legal, and social issues at the intersection of computer/information and communication technologies?

(a) Cyberethics (b) Netiquette

(c) Censorship (d) None of the above

7. Which of the following is the process of encoding, restructuring or otherwise modifying data in order to reduce its size?

(a) Decompression (b) Conjunction

(c) Data compression (d) Data collision

8. Which of the following is one of the oldest technologies for electronic data storage?

(a) Magnetic tape (b) Optical Disk

(c) Hard disk (d) SSD

9. Which of the following is the study of people, technology, organizations, and the relationships among them?

(a) DBMS (b) RDBMS

(c) MIS (d) None of the above

10. Which of the following is a sort of programming language that allows users to illustrate processes?

(a) Visual programming

(b) Data base

(c) Assembly language

(d) Machine language

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the six elements of a computer.

Or

(b) Discuss about connectivity and interactivity.

12. (a) Define application software and explain kinds of software with example.

Or

(b) Discuss about desktop accessories and personal information managers.

13. (a) Explain the various telephone related communications services with example.

Or

(b) Discuss the various factors affecting data transmission.

14. (a) Write about compression and decompression in storage with example.

Or

(b) Elaborate the diskettes, hard disks and optical disks with example.

15. (a) Discuss about management information system.

Or

(b) Describe the features of Internet programming.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss the Various developments in communication technology.

Or

(b) Elaborate the ethics of information technology.

17. (a) Discuss the importance of word processing and spread sheets.

Or

(b) Describe internet web browsers and specialized software.

18. (a) Describe about Analog and Digital signals, Modems and communication software.

Or

(b) Explain about Cyberethics, netiquette, censorship and private issues.

19. (a) Discuss the various methods to organising data in secondary storage with ex.

Or

(b) Describe the advantages of data base management systems.

20. (a) Elaborate the five generations of programming languages with example.

Or

(b) Discuss the features of HTML, JAVA and ActiveX.

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C–4528	Sub. Code 80526

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

IT and Logistics

MATHEMATICS – II

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 1 = 10)$

Answer **all** questions.

1. If m is a positive integer less than n, then $D^n(ax+b)^m$ is

   (a) 0

   (b) 1

   (c) a

   (d) $m(ax+b)^{m-n}$

2. A maximum or a minimum value of a function is called its

   (a) stationary points

   (b) extreme points

   (c) saddle points

   (d) end points

3. The value of $\int_0^{\pi/2} \cos^6 x \, dx$ is

(a) 0 (b) 1

(c) $\frac{5\pi}{16}$ (d) $\frac{3\pi}{5}$

4. $\int_0^{2x} f(x)dx = 0$, if $f(2a-x)$ is equal to

(a) $f(x)$ (b) $-f(x)$

(c) $f(2x)$ (d) $-f(2x)$

5. The particulars solution of $y'' - 4y' + 4y = e^{2x}$ is

(a) $y_p = Ae^{2x}$ (b) $y_p = Axe^{2x}$

(c) $y_p = Ax^2e^{2x}$ (d) $y_p = Ae^{2x}$

6. What is the general solution of $x^2y'' + xy' - y = 0$?

(a) $y = C_1x^{-1} + C_2x^2$ (b) $y = C_1x^{1/2} + C_2x^{-1/2}$

(c) $y = C_1x^1 + C_2x^{-1}$ (d) $y = C_1x^{-1} + C_2x$

7. Which of the following is the possible solution to the PDE $z = x\frac{\partial z}{\partial x} + y\frac{\partial z}{\partial y}$?

(a) $z = xy$ (b) $z = x^2 + y^2$

(c) $z = x^2y + f(y)$ (d) $z = x\ln y + y\ln x$

8. Consider the function $f(x)$ defined on $[0, 2]$ by $\begin{cases} 1 & for\ 0 \le x < 1 \\ -1 & for\ 1 \le x < 2 \end{cases}$ what is the Fourier series representation of $f(x)$ on $[0, 2]$?

(a) $f(x) = \frac{2}{\pi} \sum_{n=1}^{\infty} \frac{\sin n\pi x}{n}$

(b) $f(x) = \frac{2}{\pi} \sum_{n=1}^{\infty} \frac{\cos n\pi x}{n}$

(c) $f(x) = \frac{1}{\pi} \sum_{n=1}^{\infty} \frac{\sin n\pi x}{n}$

(d) $f(x) = \frac{1}{2} + \frac{1}{\pi} \sum_{i=1}^{\infty} \frac{\sin n\pi x}{n}$

9. For the function $f(x)$ defined on $[0, \pi]$ by $f(x) = \begin{cases} x, & 0 \le x \le \pi \\ 0, & otherwise \end{cases}$ then the Fourier series will contain only

(a) sine terms (b) cosine terms

(c) both (a) and (b) (d) constant terms

10. The general solution of $\frac{dy}{dx} = \frac{2x}{y}$ is

(a) $y^2 = x^2 + C$ (b) $y^2 = 2x^2 + C$

(c) $y^2 = \sqrt{x^2 + C}$ (d) $y^2 = \sqrt{2x^2 + C}$

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) If $u = \dfrac{e^{x+y+z}}{e^x + e^y + e^z}$, show that $\dfrac{\partial u}{\partial x} + \dfrac{\partial u}{\partial y} + \dfrac{\partial u}{\partial z} = 2u$.

Or

(b) Find the stationary value of $x^3 + y^3 - 3axy,\ a > 0$.

12. (a) Evaluate the integral $\int_1^e \dfrac{\ln(x)}{x} dx$.

Or

(b) Derive the reduction formula for the integral of $\int \sin^n x \, dx$.

13. (a) Solve the differential equation $y'' - 3y' + 2y = e^x$.

Or

(b) Solve the differential equation $x^2y'' + 3xy' + y = 0$.

14. (a) Form PDE by eliminating a and b from $\log z = a \log x + \sqrt{1 - a^2} \log y + b$.

Or

(b) Solve $p^2 + q^2 - 4pq$.

15. (a) Determine the Fourier series of $f(x) = x^2$ on $[0, 2\pi]$.

Or

(b) Find the Fourier sine series of $f(x) = x$ on $[0, L]$.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss the maxima and minima of the function $f(x, y) = x^4 + y^4 - 2x^2 + 4xy - 2y^2$.

Or

(b) If $u = \tan^{-1}\left(\frac{x^2 + y^2}{x - y}\right)$, find the value of $x^2 \frac{\partial^2 u}{\partial x^2} + 2xy \frac{\partial^2 u}{\partial x \partial y} + y^2 \frac{\partial^2 u}{\partial y^2}$.

17. (a) Derive the reduction formula for $I_n = \int \cos^n x \, dx$ and use it to evaluate $\int \cos^5 x \, dx$.

Or

(b) Derive the reduction formula for $I_n = \int_0^{\pi/2} (\cos x)^n \, dx$ for $n \geq 0$ and evaluate I_3.

18. (a) Solve the differential equation $y'' - 3y' + 2y = xe^x$.

Or

(b) Transform the differential equation into a second-order system and use Euler's method to approximate the solution.

19. (a) Form a PDE by eliminating a, b, c from $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$.

Or

(b) Derive the general solution of Lagrange's linear equation.

20. (a) Determine the Fourier series for $f(x) = e^x$ on $[-L, L]$.

Or

(b) Find the half-range Fourier cosine series of $f(x) = \cos(x)$ on $[0, \pi]$.

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C–4529	Sub. Code
	80527

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Second Semester

IT & Logistics

MULTIMEDIA/OFFICE SUITE SPECIALIST

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A $(10 \times 1 = 10)$

Answer **all** questions.

1. What does “multimedia refer to?

   (a) Text and images

   (b) Audio and video

   (c) A combination of text, audio, images, animation, and video

   (d) Just text and video

2. Which file format is commonly used for video files in multimedia?

   (a) .mp3 (b) .jpg

   (c) .mp4 (d) .doc

3. Which tool in Photoshop is used to remove blemishes and imperfections from an image?

(a) Brush Tool

(b) Eraser Tool

(c) Healing Brush Tool

(d) Text Tool

4. What is the shortcut key for duplicating a layer in Photoshop?

(a) Ctrl+D (b) Ctrl + J

(c) Ctrl + C (d) Ctrl+V

5. What is Macromedia Flash Primarily used for?

(a) Writing documents

(b) Creating animations and interactive web content

(c) Managing databases

(d) Editing audio files

6. What scripting language is used in Macromedia Flash to add interactivity?

(a) Javascript (b) Python

(c) ActionScript (d) HTML

7. What is Microsoft Word primarily used for?

(a) Editing videos

(b) Creating and editing text documents

(c) Managing databases

(d) Browsing the internet

8. What feature in Microsoft Word allows you to check the spelling and grammar of your document?

(a) Word Count

(b) Thesaurus

(c) Spelling and Grammar check

(d) Track Changes

9. What is Microsoft Excel primarily used for?

(a) Creating and editing text documents

(b) Browsing the internet

(c) Managing and analyzing data in spreadsheets

(d) Designing graphics

10. What is Microsoft PowerPoint primarily used for?

(a) Creating and editing text documents

(b) Developing presentations with slides

(c) Managing databases

(d) Editing audio files

Section B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the key components of multimedia and their significance.

Or

(b) Describe the role of animation in multimedia, How does it enhance the user experience?

12. (a) Explain the concept of layers in Adobe Photoshop and their importance in creating complex images.

Or

(b) Describe the various selection tools available in Adobe Photoshop and their uses.

13. (a) Describe the timeline in Macromedia Flash and its significance in creating animations.

Or

(b) Explain the process of creating a motion tween in Macromedia Flash.

14. (a) Discuss the importance of styles and formatting in Microsoft Word.

Or

(b) Explain the process of creating and managing tables in Microsoft Word.

15. (a) Describe the process of creating and formatting charts in Microsoft Excel.

Or

(b) Explain the role of slide layouts and master slides in Microsoft PowerPoint.

Section C

$(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the role and impact of multimedia in education. Discuss its advantages and challenges.

Or

(b) Evaluate the challenges and solutions in creating accessible multimedia content for individuals with disabilities. Discuss various techniques and technologies that can be used.

17. (a) Discuss the workflow of a professional photo editing process in Adobe Photoshop.

Or

(b) Analyze the role of Adobe Photoshop in graphic design. How does it integrate with other Adobe Creative Suite applications?

18. (a) Discuss the complete process of developing an interactive animation in Macromedia Flash.

Or

(b) Evaluate the challenges and best practices in optimizing Flash content for web deployment.

19. (a) Discuss the complete process of creating a professional report using Microsoft Word.

Or

(b) Analyze the role of Microsoft Word in desktop publishing. How does Word compare with specialized publishing software like Adobe InDesign?

20. (a) Discuss the complete process of analyzing data using Microsoft Excel. Include stages such as importing data, cleaning and organizing data using functions and formulas, performing data analysis (e.g., sorting, filtering, pivot tables), and presenting findings using charts and graphs.

Or

(b) Discuss the process of creating an effective presentation using Microsoft PowerPoint.

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C–4530	Sub. Code 80533

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

IT & Logistics

FUNDAMENTALS OF LOGISTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The logistics is derived from the _____word.

   (a) French (b) Latin

   (c) Spanish (d) American

2. What are the elements of logistics system?

   (a) Transportation

   (b) Warehousing

   (c) Inventory management

   (d) all of the above

3. 3 PL stands for.

   (a) three points logistics

   (b) third party logistics

   (c) three points locations

   (d) none of the above

4. JIT is a method of.

(a) Strategic Management

(b) Inventory Management

(c) Logistic Management

(d) Supply Chain Management

5. Which type of warehouse is owned and operated by a company to store its own products?

(a) Public warehouse

(b) Private warehouse

(c) Bonded warehouse

(d) Cooperative warehouse

6. Which mode of transportation is typically the fastest for long-distance travel?

(a) Road transport (b) Rail transport

(c) Air transport (d) Water transport

7. Packaging performs two functions. Marketing and _____.

(a) Distribution

(b) Store keeping

(c) Material handling

(d) Logistics

8. What type of packaging is typically used to contain liquids and prevent leakage?

(a) Cardboard box (b) Glass bottle

(c) Wooden crate (d) Paper bag

9. Integrated logistics systems included.

(a) Materials management

(b) Materials flow systems

(c) Physical distribution supported by information technology

(d) All of the above

10. Which inventory management technique categorizes inventory into three classes based on their importance?

(a) FIFO (b) LIFO

(c) JIT (d) ABC Analysis

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

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

Or

(b) How to Improve Customer Service?

12. (a) What are the benefits of logistic outsourcing?

Or

(b) Explain the characteristics of inventory.

13. (a) What are the various types of material handling equipments?

Or

(b) What are the benefits of warehousing?

14. (a) What are the functions of packing?

Or

(b) Explain the various packing cost.

15. (a) What are the driving forces behind globalisation?

Or

(b) What are the strategic issues in global logistics?

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the functions of logistics.

Or

(b) Explain the role of logistics in the economy.

17. (a) Explain the importance of inventory management in Supply chain management.

Or

(b) What are the functions of inventory?

18. (a) What are the objectives of material management?

Or

(b) Explain the various modes of transportation.

19. (a) Explain the various types of packing material.

Or

(b) Explain the essential elements of effective packaging design.

20. (a) How to measure Supply Chain Performance?

Or

(b) What are the functions of logistics information system?

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C–4531	Sub. Code
	80534

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

IT & Logistics

INTRODUCTION TO SHIPPING

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which classification of ships is primarily used for transporting natural gas in its liquefied form?

   (a) Tankers (b) Bulk Carriers

   (c) Container Ships (d) LNG Carriers

2. What is the primary purpose of Port State Control (PSC)?

   (a) To promote fair competition among shipping companies

   (b) To ensure compliance with international maritime safety, security, and environmental standards

   (c) To regulate port fees and charges

   (d) To provide financial incentives for ships visiting ports

3. Which of the following is a common type of dry cargo vessel used in chartering?

   (a) Tanker (b) Container ship

   (c) Ro-Ro vessel (d) Bulk carrier

4. Which of the following is a common type of charter in the shipping industry?

(a) Time charter (b) Space charter

(c) Voyage charter (d) All of the above

5. A bill of lading is often abbreviated as _____.

(a) AB (b) B/L

(c) BOL (d) LOB

6. The first liner company was formed in.

(a) 1825 (b) 1835

(c) 1837 (d) 1840

7. How many major ports are there in India?

(a) 10 (b) 12

(c) 13 (d) 15

8. Which ocean is the deepest in the world?

(a) Atlantic Ocean (b) Indian Ocean

(c) Southern Ocean (d) Pacific Ocean

9. An agreement enforceable by law is:

(a) A voidable contract

(b) Void

(c) A contract

(d) A void contract

10. What is the basic accounting equation?

(a) Capital + Liabilities = assets

(b) Assets + Liabilities = Capital

(c) Capital + Assets = Liabilities

(d) Liabilities – Capital = Assets

Part B ($5 \times 5 = 25$)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the benefits of operating ships?

Or

(b) Explain the various types of ship protectionism.

12. (a) What are the different types of ship chartering?

Or

(b) What is Net Tonnage and How is it calculated?

13. (a) What key clauses are typically found in tanker charter parties?

Or

(b) What are some challenges faced by containerization in the shipping industry?

14. (a) What are the advantages and disadvantages of maritime geography?

Or

(b) What are the different types of shipping agents?

15. (a) What are the three golden rules of accounting?

Or

(b) Explain the key elements of a breach of warranty of authority.

Part C (5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Explain the Process of Ship Chartering Negotiations, and what are the key considerations in this process.

Or

(b) What are the different types of Port State Control inspections?

17. (a) How to calculate Tonnage?

Or

(b) What are the key considerations in the process of ship charter?

18. (a) Explain the different types of documents used in the operation of liner shipping services.

Or

(b) Explain the various types of Bill of Lading.

19. (a) What documents are necessary for a bill of sale in a ship sale?

Or

(b) What are the difference between sea and ocean?

20. (a) What are the differences between Hague Visby and Hamburg Rules?

Or

(b) What are the advantages and limitations of Accounting?

C–4532	Sub. Code
	80535

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

IT & Logistics

DATA STRUCTURES AND ALGORITHMS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 1 = 10)

Answer **all** questions.

1. Which data structure uses LIFO (Last In, First Out) order?

   (a) Queue (b) Stack

   (c) Tree (d) Graph

2. In which data structure, elements are added at one end (rear) and removed from the other end (front)?

   (a) Stack (b) Array

   (c) Queue (d) Linked List

3. What is the index of the first element in an array?

   (a) –1 (b) 0

   (c) 1 (d) n–1

4. How is the two-dimensional array declared in C?

   (a) int array [10]; (b) int array [10] [10];

   (c) int array [10, 10] (d) int array (10, 10);

5. What is the time complexity to find the shortest path in a graph using Dijkstra's algorithm?

(a) O(V) (b) O(V^2)

(c) O (V+E log V) (d) O(V^2 log V)

6. Which of the following is a property of a tree?

(a) It is a connected acyclic graph

(b) It is a complete graph

(c) It contains at least one cycle

(d) It is a disconnected graph

7. In divide and conquer, what is the base case?

(a) The simplest subproblem that can be solved directly

(b) The initial problem before division

(c) The combination of subproblems

(d) The step where subproblems are divided

8. What is the key characteristic of the greedy method?

(a) It always provides an optimal solution

(b) It makes a series of choices that are never reversed

(c) It requires knowledge of all subproblems

(d) It divides the problem into smaller subproblems

9. Which sorting algorithm is stable and uses O(1) extra space?

(a) Merge Sort (b) Quick Sort

(c) Bubble Sort (d) Heap Sort

10. Which searching algorithm is best suited for small and unsorted datasets?

(a) Linear Search (b) Binary Search

(c) Jump Search (d) Interpolation Search

Section B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Define Big-O notation. Explain its significance in evaluating algorithm performance with an example.

Or

(b) Explain the concept of step count method.

12. (a) What is the time complexity of accessing an element in an array versus a linked list? Explain why there is a difference.

Or

(b) Discuss the space complexity of arrays and linked lists. How does it impact memory usage?

13. (a) Describe what a traversal is in the context of trees. Explain the difference between in–order, pre–order, and post-order traversal.

Or

(b) What are the main differences between breadth-first search (BFS) and depth-first search (DFS) in graph traversal?

14. (a) What is the time complexity of the merge sort algorithm? Describe how the divide and conquer strategy is applied in merge sort.

Or

(b) What is the role of the base case in a dividend conquer algorithm? Why is it important to define a base case?

15. (a) What is selection sort? Describe the steps involved in selection sort and its time complexity.

Or

(b) Explain the insertion sort algorithm.

Section C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Define and explain the concept or asymptotic notation.

Or

(b) Discuss about the applications in step count method.

17. (a) Explain the concept of a dynamic array. How does it handle resizing, and what are its advantages and disadvantages compared to static arrays?

Or

(b) Discuss the implementation of a stack using both arrays and linked lists. Compare the performance of stack operations (push, pop) for both implementations.

18. (a) What is a minimum spanning tree (MST)? Explain Prim's and Kruskal's algorithms for finding an MST. Provide a detailed example of each algorithm.

Or

(b) Discuss tree traversal methods (in-order, pre-order, post-order) in detail.

19. (a) Provide a detailed explanation of the divide and conquer approach to the problem of finding the maximum subarray sum.

Or

(b) Explain how the divide and conquer method is used to solve the matrix multiplication problem. Discuss the Strassen's algorithm and its improvements over the naive approach.

20. (a) Explain the quicksort algorithm in detail. Provide pseudocode and describe how the choice of pivot affects its performance.

Or

(b) What is hashing? Explain the purpose of a hash function in hashing.

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C–4533	Sub. Code
	80536

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

IT & Logistics

PROGRAMMING IN JAVA

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 1 = 10)$

Answer **all** the questions.

1. Which data type is used to store a single character in Java?

   (a) str (b) ch

   (c) char (d) letter

2. What is the size of long variable in Java?

   (a) 2 bytes (b) 8 bytes

   (c) 4 bytes (d) 1 byte

3. Multiple inheritance in Java can be implemented by.

   (a) Private methods

   (b) Multithreading

   (c) Protected methods

   (d) Interface

4. Which of these keywords is not a part of exception handling?

(a) try (b) finally

(c) thrown (d) catch

5. Which of the following package stores all the standard java classes?

(a) java (b) lang

(c) util (d) java.packages

6. Which of the following will ensure the thread will be in running state?

(a) yield ( ) (b) notify ( )

(c) wait ( ) (d) Thread.kill Thread ( )

7. Which of these methods can be used to output a string in an applet?

(a) display( ) (b) print( )

(c) transient( ) (d) drawstring( )

8. Which of these class is used to read characters in a file?

(a) FileWriter (b) FileReader

(c) FileInputStream (d) InputStreamReader

9. Which package provides AWT classes in Java?

(a) java.io (b) java.swing

(c) java.awt (d) java.net

10. Which event is generated when a user clicks a button in AWT?

(a) MouseEvent (b) ActionListener

(c) KeyEvent (d) WindowEvent

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss the lexical issues of Java.

Or

(b) List out the features of Java Programming.

12. (a) Differentiate Method overloading and Method overriding.

Or

(b) Explain about the Abstract class.

13. (a) Write the functions of throw and throws keyword.

Or

(b) Discuss the access protection in Java packages.

14. (a) Describe the concept of Java input stream.

Or

(b) What is a Vector in Java stream? Explain with an Example.

15. (a) Discuss the hierarchy of Java AWT classes.

Or

(b) Write a Java program to implement Mouse Events.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss about various operators supported by Java.

Or

(b) Explain the paradigm of Looping in Java.

17. (a) Explain the types of Constructors.

Or

(b) Describe any two types of Inheritance with examples.

18. (a) Explain the concept of Thread Synchronization.

Or

(b) Discuss the process of Multithreading.

19. (a) Explain the Reader and Writer class in Java.

Or

(b) Describe the methods of Scanner class with examples.

20. (a) Discuss about Event and Listeners in Event Handling.

Or

(b) Demonstrate the Layout Managers in Java?

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C–4534	Sub. Code
	80538

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

IT & Logistics

STATISTICAL AND NUMERICAL METHODS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A $(10 \times 1 = 10)$

Answer **all** questions.

1. What is the branch of statistics that deals with the organization and summarization of data?

   (a) Descriptive statistics

   (b) Inferential statistics

   (c) Probability

   (d) Regression analysis

2. Which measure of central tendency is least affected by outliers in a dataset?

   (a) Mean (b) Median

   (c) Mode (d) Range

3. What does a correlation coefficient measure?

   (a) Strength of a linear relationship between two variables

   (b) Causation between two variables

   (c) Difference between two variables

   (d) Mean of two variables

4. If two variables have a correlation coefficient of -0.75, what does this indicate?

   (a) Strong positive correlation

   (b) Strong negative correlation

   (c) Weak positive correlation

   (d) Weak negative correlation

5. Which sampling technique ensures that every member of the population has an equal chance of being selected?

   (a) Simple random sampling

   (b) Systematic sampling

   (c) Stratified sampling

   (d) Convenience sampling

6. Which sampling technique involves selecting every kth member from a list?

   (a) Simple random sampling

   (b) Systematic sampling

   (c) Cluster sampling

   (d) Convenience sampling

7. Which method is commonly used to find the roots of nonlinear equations?

   (a) Newton-Raphson method

   (b) Trapezoidal rule

   (c) Simpson's rule

   (d) Monte Carlo method

8. Which method starts with an initial guess and iteratively improves the guess to find the root of an equation?

   (a) Bisection method

   (b) Secant method

   (c) Newton-Raphson method

   (d) Euler's method

9. Which of the following methods is used for numerical integration?

(a) Euler's method

(b) Newton-Raphson method

(c) Simpson's rule

(d) Gauss-Seidel method

10. What is the purpose of numerical differentiation?

(a) To approximate the integral of a function

(b) To find the roots of a polynomial

(c) To approximate the derivative of a function

(d) To solve a system of linear equations

Section B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Define mean, median and mode.

Or

(b) Describe the concept of a normal distribution.

12. (a) Explain the concept of correlation in statistics.

Or

(b) Discuss the limitations of correlation analysis.

13. (a) What is systematic sampling, and how is it conducted?

Or

(b) Discuss the process of selecting a simple random sample.

14. (a) Describe the Bisection method for finding the roots of an equation.

Or

(b) Compare and contrast the Bisection method and the Secant method.

15. (a) Describe the principle behind the Trapezoidal Rule.

Or

(b) What is Simpson's Rule and how is it use numerical integration?

Section C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss the role of data visualization techniques in statistical analysis.

Or

(b) Compare and contrast different methods of visualizing distributions of data (histograms, box plots, and density plots).

17. (a) Discuss the methodology of calculating Pearson's correlation coefficient with an example.

Or

(b) Explain how correlation analysis can be used in predictive analytics.

18. (a) Discuss the different types of probability sampling techniques.

Or

(b) Explain the concept of sampling error and its significance in statistical analysis.

19. (a) Describe the application of numerical methods in engineering for finding the roots of equations.

Or

(b) Discuss the Newton-Raphson method in detail.

20. (a) Describe the methods of numerical differentiation and their applications.

Or

(b) Explain the application of numerical differentiation in real-world problems.

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C–4535	Sub. Code 80543

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Fourth Semester

IT & Logistics

COMPUTER NETWORKS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which physical connection is the fastest?

   (a) twisted pair (b) coaxial cable

   (c) fiber-optics (d) microwaves

2. Which of the following primarily uses guided media?

   (a) Radio broadcasting

   (b) Satellite communications

   (c) Local telephone system

   (d) Cellular telephone system

3. A _____is a set of rules that governs data communication.

   (a) protocol (b) forum

   (c) standard (d) gateway

4. In _____TDM, slots are dynamically allocated to improve bandwidth efficiency.

(a) isochronous (b) synchronous

(c) statistical (d) None of these

5. In _____congestion control, policies are applied to prevent congestion before it happens.

(a) open-loop (b) closed-loop

(c) either (a) or (b) (d) None of these

6. IPv6 addresses are _____bits in length.

(a) 128 (b) 64

(c) 32 (d) 256

7. The layer which provides reliable transparent transfer of data between end points is _____layer.

(a) 64 (b) 32

(c) 128 (d) 256

8. The process–to–process delivery of the entire message is the responsibility of the _____ layer.

(a) Presentation (b) Physical

(c) Transport (d) Network

9. Plain text and cipher text are treated as _____ in asymmetric key cryptography.

(a) Character (b) Integer

(c) Alphabet (d) Alpha–numeric

10. Which of the following is an application layer service?

(a) Remote log-in (b) File transfer and access

(c) Mail service (d) All of these

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the roles of network hardware and software in communication systems.

Or

(b) Differentiate between broadband and narrowband ISDN technologies.

12. (a) Discuss design issues in the Data Link Layer.

Or

(b) Summarize the operation of ALOHA protocol.

13. (a) Explain various routing algorithms used in networking.

Or

(b) Demonstrate the process of connection setup and routing in ATM networks.

14. (a) Discuss the role and importance of the Transport Layer in network Communication.

Or

(b) Explain gigabit Ethernet configuration with an example.

15. (a) Differentiate and compare secret key algorithms and public key algorithms.

Or

(b) Compare JPEG and MPEG standards for multimedia data compression.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain TCP/IP Protocol Architecture.

Or

(b) Justify the role of communication satellites in global telecommunications infrastructure.

17. (a) Illustrate sliding window protocols with examples.

Or

(b) Evaluate carrier sense multiple access protocols.

18. (a) Describe congestion control algorithms and their significance in maintaining Network stability.

Or

(b) Draw and explain fields of IPv4 datagram header format.

19. (a) Summarize the concept of multiplexing in the context of transport layer Protocols.

Or

(b) Analyze the design and implementation of Internet transport protocols.

20. (a) Draw a diagram for depicting general idea of a symmetric-key cipher.

Or

(b) Differentiate between client–side and server–side technologies on the World Wide Web.

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C–4536	Sub. Code
	80544

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Fourth Semester

IT & Logistics

PORT MANAGEMENT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which among the following has the largest shipyard in India?

   (a) Kolkata (b) Cochin

   (c) Visakhapatnam (d) Mumbai

2. The Jawaharlal Nehru port is located at.

   (a) Paradip (b) Cochin

   (c) Kolkata (d) Mumbai

3. In shipping vocabulary, flag pole is the place where.

   (a) post used to hoist flag

   (b) post used to load/unload the goods

   (c) front part of the ship

   (d) one embark/disembark the ship

4. Out of following, which port is handling highest number of containers in the world?

   (a) Shanghai (b) Hong Kong

   (c) Antwerp (d) Los Angeles

5. Which of the following cargo will not move by air because of its negative impact on product price?

(a) flowers (b) onions

(c) medicines (d) garments

6. Out of following which is tariff barrier?

(a) dumping

(b) import duty

(c) embargo

(d) exchange control

7. In deciding modes of transportation, the important consideration is given to.

(a) value-to volume ratio

(b) perishability

(c) cost of transportation

(d) all above factors

8. You have a shipment of heavy and bulky, semi-finished, out of gauge cargo. Which of the following container you will use?

(a) tank container (b) flat rack container

(c) general purpose (d) 20' high cube

9. Incoterms are devised by _____.

(a) world customs council

(b) international chamber of commerce

(c) world bank

(d) united nations

10. For shipment of perishable products which type of container you will prefer?

(a) Reefer containers

(b) General purpose

(c) open top type

(d) none of the above

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain briefly on the basic concepts of cargo work.

Or

(b) What are the documents involved in cargo documentation?

12. (a) What are the safety precautions when holding bulk cargoes?

Or

(b) What are the precautions when carrying concentrates?

13. (a) What are the types of Cargo Pipeline System?

Or

(b) What are the various types of refrigerated cargoes?

14. (a) What are the powers of inspector?

Or

(b) Explain briefly on :

(i) Spar ceiling (ii) Loading and ventilation

15. (a) What are the obligations of dock workers?

Or

(b) Explain briefly the Concept of Containerization.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain briefly:

(i) Heavy lift Jumbo Derrick

(ii) Tanker operation system

(iii) Cargo pipeline system

Or

(b) What are the general physical characteristics of containers?

17. (a) Explain in detail about the genesis of Freight Forwarding.

Or

(b) What are the various principles in stowing cargoes?

18. (a) Write a short note on Dock Laborers Act, 1934.

Or

(b) What are the various sectors of container markets?

19. (a) Discuss the port development to tap the potential of coastal shipping cabotage law.

Or

(b) Write the practices affecting coastal movement of cargo.

20. (a) Write the comparative analysis coastal shipping Vs inland movement.

Or

(b) Discuss about the international ships and port facility code.

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C–4537	Sub. Code 80546

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Fourth Semester

IT & Logistics

LINER TRADE

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. _____ is the best option for time sensitive cargo.

   (a) Airfreight (b) Maritime transport

   (c) Road transport (d) None of the above

2. LASH also known as _____.

   (a) RORO (b) SD14

   (c) Kangaroo ship (d) None of these

3. _____ advices ship owner on various port details.

   (a) Ship agent (b) Stevedores

   (c) Freight forwarder (d) Captain

4. _____ is a planned space for the storage and handling of goods and material.

   (a) Depot (b) Warehouse

   (c) Storage place (d) Container

5. _____ transportation is used by oil sector companies for mass movement of petroleum products including gases.

(a) Truck (b) Pipeline

(c) Rail (d) Road

6. Multiple carriers during a single journey is known as _____.

(a) Multimodal transportation

(b) Intermodal transportation

(c) Single transportation

(d) Long transportation

7. Maritime transport is under the ministry of _____.

(a) Shipping (b) Road transport

(c) Water transport (d) None of these

8. The 12 major Indian ports, which are managed by _____.

(a) Port trust of India

(b) Private companies

(c) MTO

(d) None of these

9. Ennore port is an example for _____.

(a) Land lord port model

(b) Govt. port

(c) Pvt. Port

(d) Central port

10. _____Companies need a larger organization than tramp companies.

(a) Liners

(b) Containers

(c) Ships

(d) Aircrafts

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write the different types of container ships in detail.

Or

(b) Write a note on Ro-Ro barge carrying Vessels.

12. (a) Write a note on cargoes and cargo equipment.

Or

(b) Write the role of independent ship management.

13. (a) Describe the growth in world trade Unitization.

Or

(b) Write the legal and insurance implications in the container trade.

14. (a) Explain the bill of lading UK bill lading act 1855.

Or

(b) Explain the use of bill of lading in liner trades.

15. (a) Explain the methods of payment in international trade.

Or

(b) Write a note on international contracts of sale INCO terms.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) What is liner trade? Explain the different types of ship in detail.

Or

(b) Write the role of ship officers in detail.

17. (a) Write a detailed note on bill of lading and other documentation.

Or

(b) What is containerization? Write a note on ICDS in detail.

18. (a) Explain the port disbursements agency duties.

Or

(b) Write a detailed note on paperless trading.

19. (a) Define liner trades. Write about the history of liners.

Or

(b) Write a note on:

(i) Liner Operations

(ii) Liner Documentation

(iii) Bill of Lading

20. (a) Discuss about the benefits and drawbacks of Intermodal Transportation.

Or

(b) Write a Short note on

(i) Security

(ii) ISPS Code

(iii) Cargo claims general average

C–4538

Sub. Code
80547

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Fourth Semester

IT and Logistics

WEB TECHNOLOGIES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. Which protocol is primarily used to transmit data over the internet?

   (a) FTP

   (b) HTTP

   (c) SMTP

   (d) DNS

2. What is a Hyperlink in HTML?

   (a) A type of web browser

   (b) A clickable reference that points to another resource

   (c) A type of web server

   (d) A tool used to manage websites

3. Which of the following tag is used to create a text area in HTML Form?

(a) <textarea></textarea>

(b) <text></teXt>

(c) <input type="text" />

(d) <input type="textarea" />

4. Which HTML tag is used to insert an image?

(a) <imgurl="htmllogo.jpg" />

(b)

(c) <imgsrc="htmllogo.jpg" />

(d)

5. In CSS, which syntax is used to define a rule-set for a specific HTML element?

(a) element { property: value; }

(b) element { value: property; }

(c) element: property { value; }

(d) element(property): value;

6. If two conflicting CSS rules apply to the same element, which one will be used?

(a) The rule that appears first in the stylesheet

(b) The rule with the highest specificity

(c) The rule with the lower specificity

(d) The rule that is applied last in the CSS file

7. Which of the following is the correct syntax for a while loop in JavaScript?

   (a) while (condition) { // code }

   (b) while { // code } (condition)

   (c) while (code) { condition; }

   (d) while (condition); { code }

8. What is the purpose of the continue statement in JavaScript?

   (a) Stops the execution of the loop and continues from the next iteration

   (b) Breaks out of the current loop

   (c) Skips the next iteration of a loop

   (d) Executes a block of code only once

9. What is the purpose of the onmousemove event in JavaScript?

   (a) It is triggered when the mouse pointer is clicked

   (b) It is triggered when the mouse pointer moves over an element

   (c) It is triggered when an element is clicked

   (d) It is triggered when the mouse leaves an element

10. In XML, how do you declare an element?

   (a) <element>content</element>

   (b) element(content)

   (c) element: content;

   (d) element[content]

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b) from each question.

11. (a) Explain the use of relative URL's with an example.

Or

(b) Explain the following:

(i) DNS (ii) ISP

12. (a) Discuss various HTML elements with the help of example.

Or

(b) Create a HTML document for a company home page.

13. (a) Explain the CSS Box model in detail.

Or

(b) Differentiate between and tag in HTML.

14. (a) Write JavaScript to find factorial of a given number.

Or

(b) Explain the concept switch statement in JavaScript. Illustrate with suitable example.

15. (a) What are the onFocus and onBlur events in JavaScript? How do they work in form validation? Give example.

Or

(b) Explain document structure description with example code in XML.

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b) from each question.

16. (a) Explain in detail about Internet and World Wide Web.

Or

(b) Write short note on : (i) Web tools (ii) Web domain

17. (a) Create a web page to display the time table of your class using tables.

Or

(b) What are advanced text formatting tags? Discuss it with an example.

18. (a) What do you mean by internal style and external style specification in HTML? Explain with examples.

Or

(b) Explain the font and list properties in CSS.

19. (a) What are the different types of loops supported by JavaScript? Discuss.

Or

(b) Write JavaScript to find sum of first 'n' even numbers and display the result. Get the value of 'n' from user.

20. (a) Write a JavaScript to change the color of the text to yellow and the background color to black using onmouseout event.

Or

(b) How does an XML schema differ from a DTD? Explain the benefits of using an XML schema over a DTD for validating XML data.

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