C–1559	Sub. Code
	80533

B.Sc. DEGREE EXAMINATION, APRIL 2024

Third Semester

IT and Logistics

PROGRAMMING IN JAVA

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define: Polymorphism.
2. How to initialize single dimensional array?
3. What is the use of substring() method?
4. Define: abstract class.
5. Differentiate between throws and finally keyword.
6. What is meant by Interface?
7. Write the use of append() method.
8. State the uses of Stream classes?
9. Differentiate between Choice and List boxes.
10. What is the job of Window Listener?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a Java program to check the given number as prime or not.

Or

(b) Discuss about data types in Java.

12. (a) Compare method overloading and method overriding in Java.

Or

(b) Describe any 6 string handling functions.

13. (a) Write a Java program to compute salary of an employee using interface.

Or

(b) What is multithreading? Explain how it is implemented?

14. (a) Elaborate on File input Stream.

Or

(b) Write short notes on Java utility classes.

15. (a) Discuss about different layout managers in GUI design.

Or

(b) Distinguish between component and container.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the handling of two dimensional array, giving illustrations.

Or

(b) Explain multilevel inheritance in Java with an example program.

17. (a) Discuss in detail about methods used in exception handling.

Or

(b) Explain string buffer methods with example program.

18. (a) Write an applet program to display smiley.

Or

(b) Describe menu handling operations in Java.

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C–1560	Sub. Code
	80542

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

IT and Logistics

COMPUTER NETWORKS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name any two protocols in physical layer.
2. What is the role of ISDN in computer networks?
3. What do mean by PPP?
4. Mention the use of slotted Aloha.
5. What is called firewall?
6. What is character stuffing?
7. List out the primitives of a transport service.
8. Differentiate between TCP and UDP.
9. What is named server?
10. Define cryptanalysis.

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

Answer **all** questions.

11. (a) Draw the topologies for point-to-point channels and broadcast channels.

Or

(b) List down the uses of Computer networks.

12. (a) Explain Finite state models.

Or

(b) Describe the protocols CSMA and CSMA/CD.

13. (a) Brief on congestion control algorithms.

Or

(b) Describe the format of ATM cell.

14. (a) Explain briefly about connection establishment and connection termination in transport layer.

Or

(b) Discuss on Flow control and Buffering.

15. (a) Describe the elements of Application layer.

Or

(b) "JPEG and MPEG standards" - Discuss.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) What are the different layers of ISO-OSI network model? Explain briefly the functions of each layer.

Or

(b) Discuss on Satellite communication.

17. (a) Explain Error detecting and correcting codes.

Or

(b) Discuss about any two routing algorithms.

18. (a) Explain different Multiplexing techniques.

Or

(b) Explain DES algorithm for symmetric encryption.

———————

C–1561	Sub. Code
	80543

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

IT and Logistics

WEB TECHNOLOGY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is HTML?
2. What is the use of <PRE> tag?
3. Mention the need for cascading style sheets.
4. List out some primary CSS text properties.
5. What is the use of list style property?
6. Write down the general format of CSS declaration.
7. Define: Javascript statements.
8. List out the classes of selector.
9. What are native objects?
10. What is meant by document node?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write HTML tags to display tamil and english novels using unordered list.

Or

(b) Illustrate HTML frames with an example program.

12. (a) Bring out the advantages of using CSS.

Or

(b) How to create stylesheet rules? Explain.

13. (a) What is text in CSS? Explain its properties.

Or

(b) Write in detail about background properties in CSS through an example.

14. (a) How to display alert dialog in javascript? Give an illustration.

Or

(b) Explain about properties and methods of array in javascript.

15. (a) Distinguish between browser and form object.

Or

(b) What is user defined object in javascript? Narrate.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain how forms are created in HTML.

Or

(b) Describe various attributes of <TABLE> tag in HTML.

17. (a) Elaborate on external stylesheet and importing it in HTML document.

Or

(b) List and explain few font-related CSS attributes.

18. (a) Differentiate between looping statements supported by javascript through illustrations.

Or

(b) How to perform event handling in javascript? Explain in detail.

———————

C–1562	Sub. Code
	80544

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

IT and Logistics

DATABASE MANAGEMENT SYSTEM

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. How data are stored in relational database?

2. What is meant by schema?

3. Expand the terms DCL and TCL.

4. Define the term Integrity.

5. What is meant by embedded SQL?

6. Differentiate between function and procedure.

7. What is meant by atomicity?

8. Expand the term ACID.

9. What is deadlock in database processing?

10. Write the symbols used in relational algebra for selection and projection queries?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Draw the symbols used in E-R diagram and write their purpose.

Or

(b) Define the terms primary key, foreign key and composite key. Give an example for each.

12. (a) What are constraints in database scheme? Explain.

Or

(b) Explain the key features of SQL.

13. (a) Explain different ways of joining two data tables.

Or

(b) Explain the data types in Object-Relational model.

14. (a) What is dynamic hashing? Explain through an example.

Or

(b) Brief on any two concurrency handling protocols.

15. (a) What are the advantages and disadvantages of centralized database architectures?

Or

(b) Describe client server architecture, its merits and demerits.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe Relational Model and explain ACID properties.

Or

(b) Describe various dependencies in data and ways to resolve them.

17. (a) Illustrate DML commands and their use in query processing.

Or

(b) Explain how SQL recovers crashed database using transaction log.

18. (a) Explain in detail about heterogeneous and homogeneous databases.

Or

(b) Describe any two alternatives for database architecture.

———————

C–1563	Sub. Code
	80551

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fifth Semester

I.T and Logistics

FUNDAMENTALS OF LOGISTICS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Logistics.
2. What is Customer service?
3. Define Outsourcing
4. What do you mean by Procurement?
5. Write any two types of Material Handling Equipments.
6. Why do we need service warehouse?
7. What is unitization?
8. What is communication?
9. What is Global supply chain?
10. Expand LIS.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Enumerate the objectives of logistics.

Or

(b) Discuss the elements of customer service.

12. (a) Discuss the need for Inventory control.

Or

(b) Explain the Functions of Inventory costs for holding Inventory.

13. (a) Explain about participants in Transportation Decisions.

Or

(b) Write short notes on Materials Planning.

14. (a) Explain Containerization.

Or

(b) Explain designing a Package.

15. (a) Explain the Modes of Transportation in Global Logistics.

Or

(b) Describe Logistics Strategy Requirements for an Effective Logistics.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain Logistics role in the Economy /organization.

Or

(b) Write a brief note on Logistics and customer service.

17. (a) Explain Importance of Inventory Management in Supply Chain.

Or

(b) Describe LASH Transportation.

18. (a) Brief note on Packing and Materials handling.

Or

(b) Discuss the Strategic Issues in Global Logistics.

———————

C–1564	Sub. Code
	80553

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fifth Semester

IT and Logistics

CUSTOMS PROCEDURE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Custom procedure.
2. Define SCOMET.
3. What is meant by customs broker?
4. Write a few procedures of authority.
5. Define Export Promotion scheme.
6. What is import?
7. Define power of prohibit.
8. What is meant by warehousing?
9. Define customs port.
10. Define goods in transit.

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

Answer **all** questions.

11. (a) Explain Precautions to be taken by person acquiring notified Goods.

Or

(b) Describe Power to declare places to be Warehousing Stations.

12. (a) Explain Detection of illegally imported goods and Prevention of the disposal.

Or

(b) Discuss Persons possessing notified goods intimate the place of Storage.

13. (a) Describe Customs Duties and Duty on Pilfered goods.

Or

(b) Explain Provisional Attachment to protect revenue in certain cases.

14. (a) Describe Arrival of Vessels and Aircraft in India.

Or

(b) Explain Power to exempt in detail.

15. (a) Describe Authority for Advance Rulings.

Or

(b) Explain the Powers of Authority.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write a detail note on private warehouse licensing.

Or

(b) Explain the various types of Warehousing.

17. (a) Explain in detail about duty on pilfered goods.

Or

(b) Explain the interest on delayed funds in detail.

18. (a) Explain the liability on goods transited.

Or

(b) Explain the procedures on return of warehousing bond.

———————

C–1565	Sub. Code
	80555

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fifth Semester

IT and Logistics

TRANSPORTATION AND DISTRIBUTION MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Logistics.
2. Define SCM.
3. What is Materials Handling?
4. What are the five primary activities in the value chain?
5. What is Intermodal movement?
6. What is Packaging?
7. What is a Multimodal transport system?
8. What is Safety Stock?
9. What is Logistics Management?
10. What are types of Warehouses?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the role of distribution in the supply chain.

Or

(b) Explain the distribution network concept.

12. (a) Explain transportation principles and characteristics.

Or

(b) Explain the organisation for Transport.

13. (a) Discuss the Road Transport System.

Or

(b) Describe how transportation performance, cost and value are measured.

14. (a) Explain the concept of L.P. techniques and Physical distribution.

Or

(b) Explain the different types of Water Transport.

15. (a) Explain the procedures including Customs Formalities.

Or

(b) Explain the concept of intermodal freight Technology.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the factors that influence transportation costs.

Or

(b) Describe the design and implementation of a distribution network.

17. (a) Explain the process of selecting a mode of transportation.

Or

(b) Explain how transportation routing decisions are made.

18. (a) Discuss the various elements for strategies for transportation.

Or

(b) Explain Transportation distribution channel structure, giving suitable example.

———————

C–2343	Sub. Code
	80513

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

IT AND LOGISTICS

PROGRAMMING IN C

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. What is the return type of getchar( )?

   (a) int (c) Unsigned char

   (b) char (d) string

2. ———— creates a Horizontal tab.

   (a) \\ (b) \t

   (c) \" (d) \h

3. Control Statements allow programmers to control the ———— in their program.

   (a) Linear execution (b) Control execution

   (c) Flow of Execution (d) Conditional execution

4. _____ Statement is used legally only loop (or) Switch loop.

   (a) Go to statement

   (b) Break Statement

   (c) Continue Statement

   (d) Switch Statement

5. Choose the correct syntax of functions

(a) return_type define(parameter_1, parameter_2);

(b) Function_name return_type (parameter_1, parameter_2);

(c) define return_type (parameter_1, parameter_2);

(d) return_type name_of_the_function(parameter_1, parameter_2);

6. Function argument also known as ————————

(a) Return parameter

(b) Function Statement

(c) Function parameter

(d) Return statement

7. Array values can be stored by taking _____ from the user and ———————— them in the array.

(a) Output, Storing (b) Output, Deleting

(c) Input, Storing (d) Input, Storing

8. When a sequence of characters is enclosed in ———————— in encountered by the complete, _____ is appended at the end of the string by default.

(a) Double quotation. '\o'

(b) Single quotation, '\o'

(c) Double-blinded quotation, '\o'

(d) Single- blinded quotation, '\o'

9. A Struct is a ———————— data type.

(a) Declarative data type

(b) Sequential data type

(c) Multi-declarative data type

(d) Composite data type

10. Which one is the dereference operator?

(a) * (b) +

(c) % (d) /

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write the Features and advantages of C programming languages.

Or

(b) Explain the following :

(i) Tokens

(ii) Variables

(iii) Character set.

12. (a) Illustrate the general format of C program.

Or

(b) Differentiate While and Do while.

13. (a) Specify the three prototypes of main? Where do we write function prototype in C?

Or

(b) Discriminate Type Casting and Type Conversions.

14. (a) Enlighten the declaration and definition of Arrays.

Or

(b) How to convert a String to Numbers in C? Give an example.

15. (a) Explicit Union with example and specify its Size.

Or

(b) Mention the operations performed on pointers in C. Explain in detail.

Part C (5 × 8 = 40)

Answer **all** questions.

16. (a) Explain the basic Data types supported in the C programming Language.

Or

(b) Write a C program to find the largest of three numbers using ternary operator.

17. (a) How many types of branching statements are there? Elaborate with example.

Or

(b) Write a C program that takes from user an arithmetic operator (,,+“, ,,-,,, ,, *“, or ,,/“) and two operands. Perform corresponding arithmetic operation on the operands using switch statement.

18. (a) Briefly discuss about Functions. And their types.

Or

(b) Give the scope and life time of the following :

(i) External variable

(ii) Static variable

(iii) Automatic variable

(iv) Register variable.

19. (a) Define a string. Explain any four string library functions with syntax and example.

Or

(b) Explain with example :

(i) Character string

(ii) String literal.

20. (a) What is the purpose of “Structure” concept in language C? Explain in detail with an example Program.

Or

(b) What is File? What are the facilities available in language C to handle files? Explicate.

———————

C–2344	Sub. Code
	80515

B.Sc. DEGREE EXAMINATION, APRIL 2024

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 $a \sin 45^\circ = b \operatorname{cosec} 30^\circ$, what is the value of a^4/b^4?

   (a) 6^3 (b) 4^3

   (c) 2^3 (d) 1^3

2. If $\tan\theta + \cot\theta = 2$, then what is the value of $\tan^{100}\theta + \cot^{100}\theta$?

   (a) 1 (b) 3

   (c) 2 (d) 0

3. What is the value of $(A - B) \cup (B - A)$

   (a) A (b) B

   (c) $A \Delta B$ (d) None of these

4. If A and B are two sets then $A \cap (B \cup A)^C$ is equal to

(a) B (b) A

(c) $A \cup B$ (d) ϕ

5. Find the additive inverse of Matrix $A = \begin{bmatrix} 2 & 1 \\ -3 & 0 \end{bmatrix}$

(a) $A = \begin{bmatrix} 2 & 1 \\ -3 & 0 \end{bmatrix}$ (b) $-A = \begin{bmatrix} -2 & -1 \\ 3 & 0 \end{bmatrix}$

(c) $2A = \begin{bmatrix} 4 & 2 \\ -6 & 0 \end{bmatrix}$ (d) None

6. If A and B are matrices of same order, then $(AB' - BA')$ is a

(a) Skew – symmetric (b) null

(c) symmetric (d) unit

7. For what value of x polynomial $x^2 - 4x + q$ is minimum

(a) $x = 2$ (b) $x = 5$

(c) $x = 8$ (d) $x = 10$

8. If $2 + i$ is a root of the equation $x^2 - ax + 1 = 0$ then $a =$ _____

(a) 2 (b) 4

(c) 1 (d) 8

9. If $x = at^2$, $y = 2at$, then $\frac{dy}{dx}$ is

(a) $\frac{1}{t}$ (b) $-1/t^2$

(c) $-2/t$ (d) none of these

10. Find all real values of x, the minimum value of $\frac{1-x+x^2}{1+x+x^2}$ is equal to

(a) 0 (b) 1

(c) 3 (d) $\frac{1}{3}$

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

Answer **all** questions

11. (a) Write the expression of $\tan 4\theta$ in term of $\tan\theta$.

Or

(b) Prove that $\cos^5\theta = \frac{1}{16}(\cos 5\theta + 5\cos 3\theta + 10\cos\theta)$.

12. (a) Show that $A-(B-C) = (A-B) \cup (A \cap C)$.

Or

(b) Prove that for any two sets A and B, $A-(A \cap B) = A-B$.

13. (a) If $A = \begin{bmatrix} 2 & 3 & 1 \\ 0 & -1 & 5 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 2 & -1 \\ 0 & -1 & 3 \end{bmatrix}$, find $2A - 3B$.

Or

(b) If A and B are symmetric matrices of the same order then prove that $AB + BA$ is symmetric and $AB - BA$ is skew symmetric.

14. (a) Write a cubic equation with the roots 0, 1, 2.

Or

(b) Find the equation whose roots are less by 2, then the roots of the equation $x^5 - 3x^4 - 2x^3 + 15x^2 + 20x + 15 = 0$.

15. (a) If $y = a\cos(\log x) + b\sin(\log x)$, prove that $x^2 y_2 + x y_1 + y = 0$.

Or

(b) Find y_n if, $y = \sin^2 x \cos^2 x$.

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

Answer **all** questions

16. (a) Prove that

$$\sin^4 \theta \cos^3 \theta = \frac{1}{64} [\cos 7\theta - \cos 5\theta - 3\cos 3\theta + 3\cos \theta].$$

Or

(b) Prove that

$$\frac{\sin 7\theta}{\sin \theta} = 64\cos^6 \theta - 80\cos^4 \theta + 24\cos^2 \theta - 1.$$

17. (a) If $A = \{1, 2, 3\}$, $B = \{a, b\}$. Find $A \times B$, $B \times A$ and $A \times A$ and $A^2 \times B$.

Or

(b) If $P = \{\langle 1,2\rangle, \langle 2,4\rangle, \langle 3, 4\rangle\}$,

$Q = \{\langle 1,3\rangle, \langle 2,4\rangle\langle 4,2\rangle\}$

Find (i) $P \cup Q$, $P \cap Q$, $\tilde{P}$, $\tilde{P} \cup Q$

(ii) Domains of P, $P \cup Q$, $P \cap Q$.

18. (a) Find the inverse of the matrix $A = \begin{bmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{bmatrix}$.

Or

(b) Find the eigen value and eigen vector of the matrix $A = \begin{bmatrix} 5 & 4 \\ 1 & 2 \end{bmatrix}$.

19. (a) Show that on diminishing the roots of the equation $6x^4 - 43x^3 + 76x^2 + 25x - 100 = 0$, by 2, it becomes a reciprocal equation and hence solve it.

Or

(b) If $\alpha + \beta + \gamma = 1$, $\alpha^2 + \beta^2 + \gamma^2 = 2$, $\alpha^3 + \beta^3 + \gamma^3 = 3$.

Find $\alpha^4 + \beta^4 + \gamma^4$.

20. (a) Find the extreme values of the function of $F(x, y) = x^3 + y^3 - 3x - 12y + 20$.

Or

(b) If $Z = f(x, y)$, $x = r\cos\theta$, $y = r\sin\theta$, then prove that $\left[\frac{\partial z}{\partial x}\right]^2 + \left[\frac{\partial z}{\partial y}\right]^2 = \left[\frac{\partial z}{\partial r}\right]^2 + \frac{1}{r^2}\left[\frac{\partial z}{\partial \theta}\right]$.

———————

C–2345	Sub. Code
	80516

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

IT and Logistics

PROBLEM SOLVING TECHNIQUES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Recursion is considered a powerful tool for solving complex problems because it allows breaking down large and ———— into smaller, more manageable ————

   (a) Intricate problem, Sub problem

   (b) Intricate problem, main problem

   (c) Un-intricate problem, main problem

   (d) Intricate problem, Complex problem

2. ———— Symbol that has syntactic meaning and has got significance.

   (a) Character (b) Operator

   (c) literal (d) Delimiters

3. Which operator utilized the name of the structure connect to its member name?

(a) dot operator(.)

(b) logical operator(&&)

(c) pointer operator(&)

(d) Arrow operator(->)

4. A Union is a type of data that is ————————

(a) Self defined (b) Predefined

(c) Union defined (d) User defined

5. To declare a pointer, we use the

(a) Reference operator

(b) Address operator

(c) Dereference operator

(d) Memory operator

6. Most input/output streams have fully ————————

(a) Ordered (b) Defaulted

(c) Buffered (d) Pointed

7. Choose the right two techniques can be applied to enhance Linear Search.

(a) Transposition, Move to Front

(b) Transposition, Front to Move

(c) position, Move to Front

(d) Position, Front to Move

8. Find the factorial 4!, The value is ————————

(a) 23 (b) 24

(c) 27 (d) 21

9. The simplest method to find a number's prime factors is to divide the original number by the prime factors until the remainder equal to ————————

(a) 0 (b) –1

(c) –2 (d) 1

10. By raising the power of (y) as ———————— the pow() function can be used to calculate the power of the base number (x).

(a) (x^y) (b) (x^{-y})

(c) (y^x) (d) (y^{-x})

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

Answer **all** questions.

11. (a) Illuminate the role of Notion of Algorithms and Programs.

Or

(b) Explain the following:

(i) Passing by value

(ii) Passing arrays to functions

12. (a) Discuss the fundamentals of Structure.

Or

(b) Write short notes on:

(i) File Inclusion Directive

(ii) Token passing Operator

13. (a) What is Pointer Arithmetic? State pointer as Function Arguments.

Or

(b) (i) Delineate Pointers to Structures and Union.

(ii) Describe Self Referential Structure.

14. (a) How Summation of a set of numbers. Explain.

Or

(b) Write an algorithm to count the number of vowels in string 'EXAMINATION'.

15. (a) Write an algorithm and flowchart to find whether the given number is Prime or Not.

Or

(b) Write an algorithm for finding the GCD of two Integers.

Part C

$(5 \times 8 = 40)$

Answer **all** questions.

16. (a) Discuss the Problem Solving aspects:

(i) Problem Definition Phase

(ii) Getting started on a Problems

(iii) Similarities among problems.

Or

(b) Explain Control statements with example.

17. (a) Explicate the concepts:

(i) Passing Structure to functions

(ii) Nested Structures.

Or

(b) Difference between Union and Structures with example program.

18. (a) Enlighten the concept of pointers. Discuss its declaration, Initialization and its usage with example.

Or

(b) State :

(i) File Handling

(ii) File Pointers

(iii) Opening, Closing, Processing and Updating Files.

19. (a) Differentiate Factorial Computation and sine Function Computation.

Or

(b) What kind of algorithm technique is used by the linear search? Elucidate.

20. (a) Elucidate the most important algorithm design techniques used.

Or

(b) Explain the Removal of duplicates from an Ordered Array.

———————

C–2346

Sub. Code
80523

B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

IT and Logistics

OBJECT ORIENTED PROGRAMMING IN C ++

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. The value 132.54 can be represented using which data type?

   (a) double (b) void

   (c) lid (d) boot

2. The if .. else statement can be replaced by which operator?

   (a) Bitwise operator

   (b) Conditional operator

   (c) Multiplicative operator

   (d) Addition operator

3. What is the other name used for functions inside a class?

(a) Member variables (b) Member functions

(c) Class functions (d) Class variables

4. Which function can be called without using an object of a class in C++?

(a) Virtual function (b) Inline function

(c) Static function (d) Constant function

5. Which member function doesn't require any return type?

(a) Static

(b) Constructor

(c) Const

(d) Constructor and destructor

6. Which of the following operators cannot be overloaded?

(a) >> (b) ?:

(c) • (d) Both (a) and (c)

7. Which of the following advantages we lose by using multiple inheritances?

(a) Dynamic binding

(b) Polymorphism

(c) Both Dynamic binding and Polymorphism

(d) Constructor

8. What is a pure virtual function?

(a) A virtual function defined inside the base class

(b) A virtual function that has no definition relative to the base class

(c) A virtual function that is defined inside the derived class

(d) Any function that is made virtual

9. What is meant by of stream in C++?

(a) Writes to a file

(b) Reads from a file

(c) Writes to a file & Reads from a file

(d) Delete a file

10. What is the use of the 'finally' keyword?

(a) It used to execute at the starting of the program

(b) It will be executed at the end of the program even if the exception arised

(c) It will be executed at the starting of the program even if the exception arised

(d) It will be executed at the middle of the program even if the exception arised

Section B (5 × 5 = 25)

Answer **all** questions.

11. (a) Differentiate between Procedural Approach and Object Oriented Approach.

Or

(b) Write a C++ program to print the prime numbers between 10 and 100.

12. (a) Explain briefly about function overloading with a suitable example.

Or

(b) Elaborate inline function with an example.

13. (a) Write a short note on type conversion.

Or

(b) Explain in detail about command line arguments in C++.

14. (a) Define virtual function. Write a C++ program to illustrate virtual function.

Or

(b) What are the access specifiers in C++? Explain with example program.

15. (a) How to catch various types of exceptions with single catch block? Explain.

Or

(b) Write short note on manipulators.

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

Answer **all** questions.

16. (a) Describe in detail about basic concept of Object Oriented Programming.

Or

(b) Discuss the various operators in C++.

17. (a) What are the different ways available to define a member functions? Explain with example.

Or

(b) Write short notes on me following:

(i) static data member

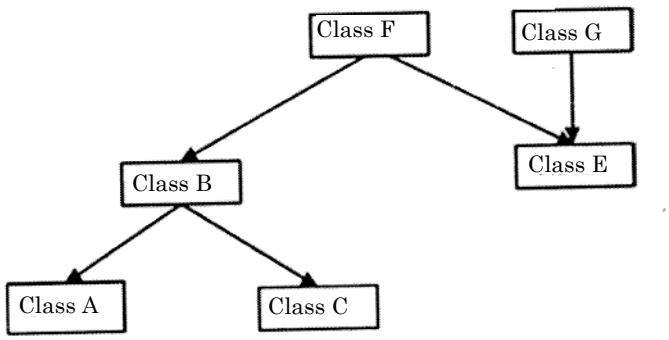
(ii) static member function

18. (a) What are the characteristics of constructor? Explain the default and copy constructor with example.

Or

(b) Discuss in detail about binary operators over loading with an example.

19. (a) Write C++ program for the following diagram.



Or

(b) Discuss on virtual base class with example.

20. (a) Describe in detail about formatted console I/O operations in C++.

Or

(b) Write a C++ program to re-throw an exception.

———————

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B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Information Technology and Logistics

PRINCIPLES OF INFORMATION TECHNOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Signals in the form of pulse are known as ————————

   (a) Analog (b) Digital

   (c) Mechanical (d) None of these

2. The application of moral principles to the use of computers and the internet

   (a) Computer ethics (b) Protocols

   (c) Software (d) All of these

3. The software designed to perform a specific task.

   (a) Synchronous software

   (b) Package software

   (c) Application software

   (d) System software

4. In a spreadsheet, letters are used to represent _____

(a) Columns (b) Blocks

(c) Rows (d) Cells

5. What is the meaning of MODEM?

(a) Modern Electronic Machine

(b) Modulator and Demodulator

(c) Modern Development Machine

(d) Modulator and Convertor

6. _____ is a type of software designed to help the user's computer detect viruses and avoid them.

(a) Malware (b) Adware

(c) Antivirus (d) Both (b) and (c)

7. Data compression means to _____ the file size.

(a) Increase (b) Decrease

(c) Neutralize (d) None of the above

8. Magnetic tape is generally a plastic ribbon coated with _____

(a) Magnesium oxide (b) Chromium dioxide

(c) Zinc oxide (d) Copper oxide

9. Which of the following is not a computer programming language?

(a) COBOL (b) ASCII

(c) FORTRAN (d) BASIC

10. Program which's written originally by the programmer is classified as

(a) object code (b) machine code

(c) Source program (d) interactive programs

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a brief note on the development of computer technology.

Or

(b) Discuss briefly about connectivity and interactivity in computer and communication technology.

12. (a) Write short notes on database software.

Or

(b) Explain briefly about presentation graphics software.

13. (a) Write a brief note on telephone related communication services.

Or

(b) Discuss briefly on the principles of videoconferencing.

14. (a) Explain briefly about the concept of compression.

Or

(b) How do you organize data in secondary storage devices? Discuss.

15. (a) Narrate the steps involved in programming.

Or

(b) Give a brief account on internet programming.

Part C

$(5 \times 8 = 40)$

Answer **all** questions.

16. (a) Elaborate on the elements of computer and communication system.

Or

(b) Discuss in detail about the ethics of information technology.

17. (a) Describe in detail about the types of application software.

Or

(b) Explain in detail about internet web browsers and its types.

18. (a) Discuss in detail about shared resources with a neat structure.

Or

(b) Elaborate on communication channels with a neat structure.

19. (a) Explain the following

(i) Optical disks

(ii) Magnetic tapes.

Or

(b) Discuss in detail about file management system with a neat structure.

20. (a) Elaborate in detail about various phases of analysis and design.

Or

(b) Discuss in detail about generation of programming languages.

———————

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B.Sc. DEGREE EXAMINATION, APRIL 2024

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. $\lim_{\theta \to 0} \frac{\sin\theta}{\theta} =$ _____ .

(a) 1 (b) 0

(c) 2 (d) –1

2. If $y = \sin(ax+b)$, then the value of y_1 = _____ .

(a) $\sin\left(\frac{\pi}{2}+ax+b\right)$ (b) $a^n \sin\left(\frac{\pi}{2}+ax+b\right)$

(c) $a^n \sin(x+b)$ (d) $a^n \sin\left(\frac{\pi}{2}+ax\right)$

3. $\int \tan\theta d\theta =$ _____ .

(a) $\log(\cot\theta)$ (b) $\log(\cos e\theta)$

(c) $\log(\sec\theta)$ (d) $\log(\sin\theta)$

4. $\int_0^{\pi/2} \sin^6 x dx =$ ———————— .

(a) $\frac{5\pi}{12}$ (b) $\frac{5\pi}{22}$

(c) $\frac{5\pi}{42}$ (d) $\frac{5\pi}{32}$

5. If m_1 and m_2 are two real roots. Then the complementary function is

(a) $y = Ae^{m_1 x} + Be^{m_2 x}$ (b) $y = Ae^{m_1 x} - Be^{m_2 x}$

(c) $y = Ae^{m_1 x} e^{m_2 x}$ (d) none

6. The differential equation $y'' + 6y' + 9y = 50e^{2x}$ have particular integral

(a) $\frac{2e^{2x}}{3}$ (b) $\frac{e^{2x}}{3}$

(c) $2e^{2x}$ (d) none

7. The elimination of the arbitrary constants from $z = ax + by + ab$, then the PDE is

(a) $z = ax + by + ab$ (b) $z = px + qy + pq$

(c) $z = ax + by$ (d) $z = px + qy$

8. The solution of $\frac{\partial z}{\partial x} = 0$ is

(a) $z = f(x)$ (b) $z = f(y)$

(c) $z = x$ (d) none

9. The value of b_n in the expansion x^2 as a Fourier series in $(-\pi, \pi)$.

(a) 0 (b) 1

(c) 2 (d) 3

10. If $\int_{-a}^{a} f(x)dx = 0$, then $f(x)$ is an ———————— function.

(a) even (b) odd

(c) inverse (d) none of these

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

Answer **all** the questions.

11. (a) Find $\lim_{x \to 0} \frac{1-\cos x}{x}$.

Or

(b) Find y_n if $y = \frac{3x^2 - 1}{(x-1)^2(2x+1)}$.

12. (a) Evaluate $\int \frac{dx}{4+5\cos x}$.

Or

(b) Establish the reduction formula $\int \sin^n x dx$.

13. (a) Solve : $(D^2 - 2D + 2)y = e^x x^2$.

Or

(b) Solve : $x^2 y'' + 2xy' + 2y = x$.

14. (a) From the PDE by eliminating the arbitrary function from $z = xy + f(x^2 + y^2 + z^2)$.

Or

(b) Solve : $p(1-q^2) = q(1-z)$.

15. (a) Determine the Fourier Series of $f(x) = x$ in the interval $-\pi < x < \pi$.

Or

(b) Obtain the Fourier cosine series of $f(x) = \pi - x$ in the interval $0 < x < \pi$.

Part C (5 × 8 = 40)

Answer **all** the questions.

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

Or

(b) If $z = f(x, y)$ and $x = r\cos\theta, y = r\sin\theta$, prove that $\left(\frac{\partial z}{\partial x}\right)^2 + \left(\frac{\partial z}{\partial y}\right)^2 = \left(\frac{\partial z}{\partial r}\right)^2 + \frac{1}{r^2}\left(\frac{\partial z}{\partial \theta}\right)^2$.

17. (a) Evaluate $\int_0^{\frac{\pi}{4}} \log(1 + \tan\theta) d\theta$.

Or

(b) Evaluate $\int x^m (\log x)^n dx$, (where m and n are positive integers) and hence evaluate $\int x^4 (\log x)^3 dx$.

18. (a) Solve : $(D^2 - 4D + 4)y = e^{2x} + \cos 4x + x^2$.

Or

(b) Solve : $(x^2 D^2 - xD + 1)y = \left[\frac{\log x}{x}\right]^2$.

19. (a) Solve : $z = px + qy + \sqrt{1 + p^2 + q^2}$.

Or

(b) Solve : $(mz - ny)p + (nx - lz)q = (ly - mx)$.

20. (a) Obtain the Fourier series of period 2π, for the function $f(x) = x^2$ in $(-\pi, \pi)$ and hence deduce that $\frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} \ldots$

Or

(b) Obtain the Fourier series for the function $f(x) = (\pi - x)^2$ in $0 < x < 2\pi$.

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B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

I.T. and Logistics

MULTIMEDIA/OFFICE SUITE SPECIALIST

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is the extension of MPEG audio file?

   (a) .mov (b) .mp4

   (c) .mpeg (d) .mp3

2. Which of the following format of video compression was used for efficient coding of video sequence?

   (a) MPEG – 1 (b) MPEG – 2

   (c) MPEG – 3 (d) MPEG – 4

3. What does PSD stand for?

   (a) Photoshop Shopping document

   (b) Photoshop document

   (c) Photoshop Digital

   (d) Photoshop Shopping Digital

4. What is the purpose of the direct selection tool?

(a) The direct selection tool erases color in an image

(b) The direct selection tool selects.

(c) The direct selection tool blurs exi

(d) All of the above

5. This ideals with the rotation and movement of the object from one point to another in specific frames.

(a) Tweening (b) Shape tween

(c) Motion tween (d) Transition

6. Which of the following is used to move a square from left to right?

(a) Shape tween (b) Motion tween

(c) Timeline (d) Layer

7. What is the name of the feature that allow us to take a step backward if we've made a mistake?

(a) Redo (b) Cancel

(c) Undo (d) Backspace

8. Mail merge is the process of combining document design with a list to create multiple copies of document for each entry in the list. The list is called ————————.

(a) Main document (b) Data source

(c) Form label (d) Database

9. The pictorial form of representing the data in excel

(a) Themes (b) Charts

(c) Clip Arts (d) Pictures

10. ———————— allows you to create a new presentation and open an existing presentation.

(a) Place holder (b) Task pane

(c) Outline pane (d) Slide pane

Section B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are video file formats? Explain.

Or

(b) Write a brief note on the applications of multimedia.

12. (a) How do you navigate a workspace in photoshop? Discuss.

Or

(b) Write short notes on retouching tools in photoshop.

13. (a) Discuss briefly about flash guide tween.

Or

(b) Write a brief note on the features of flash.

14. (a) What are the various options in formatting a paragraph in MS Word? Explain.

Or

(b) Explain spell check features with examples.

15. (a) How do you insert and delete a worksheets in MS Excel? Discuss.

Or

(b) Describe the steps to create powerpoint presentation? Explain with an example.

Section C (5 × 8 = 40)

Answer **all** questions.

16. (a) Elaborate on multimedia software tools.

Or

(b) Discuss in detail about the process of capturing and playing videos in multimedia.

17. (a) Describe in detail about layers and blend modes in photoshop with examples.

Or

(b) Explain in detail about painting tools in photoshop and their uses.

18. (a) Discuss in detail about flash tweening with an example.

Or

(b) How do you create animation in flash? Explain in detail.

19. (a) Explain the following in Word with examples

(i) Find and Replace

(ii) Thesaurus.

Or

(b) With an example, describe the step by step procedure in mail merging.

20. (a) How do you create a chart in MS Excel? Explain in detail with an example.

Or

(b) How do you perform the following operations in MS Powerpoint

(i) Timing control

(ii) Adding hyperlinks

(iii) Adding pictures.

———————