C–8397	Sub. Code
	80523

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

IT and Logistics

OBJECT ORIENTED PROGRAMMING IN C++

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. Define the term polymorphism.

2. List down any ten keywords available in C++.

3. What is the use of main( ) function?

4. What are the characteristics of static data member?

5. How to declare a constructor?

6. Define: vector datatype.

7. Draw an example diagram for multilevel inheritance.

8. What is meant by virtual function?

9. Define: runtime exception.

10. What is the job of I/O manipulator?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about datatypes available in C++.

Or

(b) Write a C++ program to check the given number is odd or even using if statement.

12. (a) Write in detail about inline function.

Or

(b) Explain how a member function is defined. Give an example.

13. (a) Describe the importance of destructors.

Or

(b) Describe the use of one dimensional array in C++.

14. (a) Discuss in detail about hybrid inheritance.

Or

(b) What is the use of virtual base class? Explain.

15. (a) Distinguish between put and get function through an example.

Or

(b) Why program rethrows an exception? Explain.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain operators in C++ with suitable examples.

Or

(b) Illustrate function overloading with an example.

17. (a) Write a C++ program for matrix addition.

Or

(b) Describe operator overloading concept with an example program.

18. (a) Explain hierarchical inheritance with an example program.

Or

(b) Describe formatted console I/O operations.

———————

C–8398	Sub. Code
	80524

B.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

IT and Logistics

MATHEMATICS – II

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define Limit of function.
2. Define Partial Differentiation.
3. What are definite integrals?
4. Write the concept of reduction formula in integration.
5. How do you solve non–homogeneous second order differential equations?
6. What is ordinary differential equations?
7. Define partial differential equation.
8. Which method is used for partial differential equations.
9. What is Fourier series with example?
10. How do you use the Fourier series formula.

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

Answer **all** questions.

11. (a) Find y_2 for the function $y = e^{3x+2}$

Or

(b) Given the two variable function $f(x,y) = x^2 - xy + y^5$. Find the first–order partial derivatives fx and fy.

12. (a) Evaluate $\int x^3 \sin x \, dx$.

Or

(b) Evaluate $\int_0^{\pi/4} \frac{1+\sin^2 x}{\cos^2 x} dx$.

13. (a) Solve $\left(D^2 + 4D + 4\right)Y = e^{-2x} + \sin x$.

Or

(b) Solve $\left(D^2 + 2D - 3\right)y = e^x \cos x + e^{-2x}$

14. (a) Eliminate the arbitrary function f from $f\left(x^2 + y^2, z - xy\right) = 0$.

Or

(b) Solve $p^2 + q^2 = npq$

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

Or

(b) Express f(x)=x as a Fourier series in the interval $-\pi < x < \pi$.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Find the maxima and minima values of the function $f(x,y) = xy + \frac{1}{x} + \frac{1}{y}$

Or

(b) Using the formula evaluate $\int_0^{\pi/2} \sin^7 x \, dx$.

17. (a) Solve $\left(D^2 + 1\right)y = x \sin x$.

Or

(b) Solve $x^3 y''' + 3x^2 y'' + xy' + y = x^2 + \log x$.

18. (a) Solve $x(y-z)p + y(z-x)q = z(x-y)$.

Or

(b) Expand cosx in a half-range sin series in $(0, \pi)$.

———————

C–8400	Sub. Code
	80542

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

IT and Logistics

COMPUTER NETWORKS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Differentiate between Broadband and Narrowband.

2. What is the fifth layer in OSI reference model?

3. What are called sliding window protocols?

4. What is a stop-and-wait protocol?

5. What is called tunnelling?

6. Write down the format of ATM cell.

7. What do you mean by crash recovery?

8. List out the security techniques in transport layer.

9. What is meant by name server?

10. Name the various standards of data compression.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Network software.

Or

(b) Explain about communication satellites.

12. (a) Explain Error detecting codes.

Or

(b) What are called collision free protocols? Explain.

13. (a) Explain the job of Fragmentation.

Or

(b) Compare routing and switching.

14. (a) Explain the steps involved in establishing a connection in transport layer.

Or

(b) Brief on Internet transport protocols.

15. (a) Explain the need for Network security.

Or

(b) Write about DNS and SNMP protocols.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the OSI Reference model with neat sketch.

Or

(b) Explain about guided transmission media.

17. (a) Explain petri net model with neat sketch.

Or

(b) Explain in detail about the following routing algorithms:

(i) Distance vector routing.

(ii) Routing for mobile hosts.

18. (a) Explain about Flow control and Buffering mechanism.

Or

(b) Compare the functions of Secret key and public key algorithms.

———————

C–8401	Sub. Code
	80543

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

IT and Logistics

WEB TECHNOLOGIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. List out the important elements of HTML.

2. How to create a password field in HTML form?

3. What are the two methods of implementing style sheets?

4. Give the syntax of CSS rule.

5. Write about CSS comments.

6. How to link CSS with HTML document?

7. What do you mean by Font family?

8. Write an example for array creation in Javascript.

9. Expand and write a note on DOM.

10. What are the types of events?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write HTML program to display tamil and english novels using ordered list.

Or

(b) Illustrate HTML tables with an example program.

12. (a) How can CSS be integrated into an HTML page? Give an example.

Or

(b) With illustrations, explain briefly about inline style sheet.

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

Or

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

14. (a) Explain the advantages of JavaScript.

Or

(b) Discuss about dynamic data types in JavaScript.

15. (a) Distinguish between window and document object.

Or

(b) What are built-in objects in JavaScript? Illustrate their use.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the ways to include graphics in an HTML document.

Or

(b) Describe the principles and uses of href element.

17. (a) Discuss in detail about external style sheet.

Or

(b) Write a HTML program that uses CSS with margin and padding properties.

18. (a) Elaborate on JavaScript operators.

Or

(b) How to handle cookies in Javascript? Discuss

———————

C–8402	Sub. Code
	80544

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. What do you mean by tuple and attribute?

2. What is meant by view?

3. Expand the terms DDL and DML.

4. Define the term decomposition.

5. What is data dictionary?

6. What is complex data type?

7. What is meant by index?

8. What is meant by hashing?

9. What do you mean by homogenous database?

10. What is meant by distributed database?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss on the basic concepts of E-R model.

Or

(b) Describe different types of keys used in database schema.

12. (a) What is normalization? Explain briefly about First Normal Form.

Or

(b) Explain selection and projection operators in SQL through example.

13. (a) Explain nested relation through an example.

Or

(b) Name any two types of queries and explain their use through examples.

14. (a) Explain briefly about the term concurrency and its necessity in database transactions.

Or

(b) Write short notes on the terms atomicity and amiability.

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

Or

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

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the process of creating a database schema using E-R data model.

Or

(b) Explain in detail about first three normal forms in normalization process.

17. (a) Describe Object-Relational Model.

Or

(b) Explain different any two file organizations used to store database data.

18. (a) Explain hashing and its storage mechanism compared to sequential storage.

Or

(b) Describe the distributed database architecture in detail.

———————

C–8403	Sub. Code
	80551

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

IT and Logistics

FUNDAMENTALS OF LOGISTICS

(2019 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Differentiate between SCM and Logistics

2. How can logistics retain customers?

3. Write short note on outsourcing

4. What is a selective control of inventory? Why is it needed?

5. List any two problems in transportation

6. What are the service benefits of warehousing?

7. Name the types of packaging

8. What are the factors influencing the design of packaging?

9. Differentiate between domestic and global logistics

10. Can you recall the Strategic issues?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) How do you explain customer service relationship results from managing all activities in the logistics?

Or

(b) How would you describe objectives of Logistics and explain the impact of Logistics decision on the success of an organization.

12. (a) Briefly explain the benefits of logistical outsourcing.

Or

(b) "Inventory control is the key to profitable running of business" Comment.

13. (a) Classify different types of modes of transportation.

Or

(b) Explain the functions of warehousing. Also state the benefits of warehousing in logistics.

14. (a) Discuss the various objectives of logistical packaging.

Or

(b) Briefly explain the different types of movement of containers.

15. (a) Define LIS. What are its principles? Also explain the functions of Logistics Information System.

Or

(b) Briefly discuss the purpose of Activity Based Costing.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) "Value added service is an innovative approach adopted for gaining a competitive edge" Explain with examples.

Or

(b) Discuss the various types of selective inventory control techniques with their merits and demerits.

17. (a) What is inventory management? Discuss its importance in supply chain.

Or

(b) How material handling system enhances productivity in logistics system? Explain with illustrations.

18. (a) Discuss the strategic issues in Global Logistics.

Or

(b) What are third and fourth party logistics? Briefly explain 3PL and 4PL.

———————

C–8404	Sub. Code
	80553

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

IT and Logistics

CUSTOMS PROCEDURE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is an Airport?
2. What does a Custom officer do?
3. What are notified goods under Customs Act?
4. What do you mean by power to exempt?
5. What is levy of Customs duty?
6. What is specified goods in customs duty?
7. What is manifest in Import report?
8. What are home consumption goods?
9. Is Import duty a liability?
10. How do duty drawbacks work?

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

Answer **all** questions.

11. (a) Discuss the power of customs officers.

Or

(b) Discuss the power to prohibit importation and exportation of goods.

12. (a) What are the powers of SSB under section 100 of Customs Act?

Or

(b) Discuss the Goods notified under section 11C of Customs Act 1962.

13. (a) What are the basic condition for levy of customs duty?

Or

(b) Who and under what circumstances application for advance ruling can be made?

14. (a) What are the provisions relating to conveyances?

Or

(b) What is Clearance of goods? Briefly explain its procedure?

15. (a) How do you account customs duty? Which section provides for transit of certain goods without payment of duty?

Or

(b) What are the licenses required for Warehouses?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are reason for prohibition of importation and exportation?

Or

(b) What are the goods prohibited under Customs Act? Discuss the export restrictions in India.

17. (a) What is pilfered goods under section 13 of customs purpose? In what circumstances customs duty can be remitted on import goods?

Or

(b) What is the procedure in case of goods not cleared warehoused (or) transshipped within 30 days after landing?

18. (a) Discuss the procedure for filing import general manifest filing in shipping?

Or

(b) What are procedure for clearance of warehoused goods for home consumptions?

———————

C–8405	Sub. Code
	80555

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

IT and Logistics

TRANSPORTATION AND DISTRIBUTION MANAGEMENT

(2019 Onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define distribution requirement planning.
2. What is distribution channel?
3. Who is internal customer?
4. Define place utility.
5. What do you mean by access to careers?
6. Mention few responsibilities of transportation managers.
7. What is logistics accounting?
8. Why is accurate cost data important for logistics costing?
9. Define the term integrated logistics.
10. What is Electronic Data Interchange (EDI)?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss the various components of the physical distribution system.

Or

(b) Explain what is meant by partnering through collaboration.

12. (a) Explain the role of distribution channels in supply chain.

Or

(b) Discuss the importance of facility decisions in supply chain.

13. (a) Explain the role of transportation in logistics.

Or

(b) Write note on characteristics of transportation modes and selection.

14. (a) Summaries the career selection process.

Or

(b) Discuss various methods of logistics costing.

15. (a) Elucidate the role of technology in transportation security.

Or

(b) Explain the conceptualization of integrated logistics model.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the problem associated with fleet maintenance.

Or

(b) Describe various modeling approaches to supply chain network design.

17. (a) What are network optimization models? Discuss its applications.

Or

(b) Discuss the impact of logistics on return on investment and share holders value.

18. (a) Explore the techniques used to measure transportation cost and value.

Or

(b) Explain the requirements for developing a strategic logistic plan.

———————