C–7316	Sub. Code
	80513

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

IT and Logistics

PROGRAMMING IN C

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define identifier.

2. List out the logical operators.

3. Write down the syntax of if..else statement.

4. What is the purpose of break statement?

5. What do you mean by function prototype?

6. Mention the various storage classes in C.

7. What is an array?

8. Write down any four string handling functions.

9. Differentiate structure and union.

10. What is a pointer?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about C keywords.

Or

(b) List and explain the various arithmetic operators in C.

12. (a) Describe the structure of a C program.

Or

(b) Explain Nested control structures with example.

13. (a) Explain Recursion with a sample code.

Or

(b) How will you define function with arguments? Explain with an example.

14. (a) Write a C program to arrange array of n numbers in ascending order.

Or

(b) Write about Multidimensional array with examples.

15. (a) Explain the various operations on pointers.

Or

(b) Write short notes on File handling in C.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the fundamental character set in C.

Or

(b) Explain looping statements with syntax and example.

17. (a) Write about Input and Output functions in C.

Or

(b) Write a C program to calculate the factorial of a given number.

18. (a) Write a C program for Matrix multiplication.

Or

(b) Explain structures with syntax and example.

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C–7317	Sub. Code
	80514

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

IT and Logistics

MATHEMATICS — I

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Expand $\sin\sin n\theta$.

2. Expand $\cos^n \theta$ in terms of cosines of multiples of θ.

3. If $A = \{1, 2, 3\}$ and $B = \{1, 2, 3, 4\}$ then find $A - B, B - A$.

4. Define symmetric difference.

5. If $A = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$ then prove that $AA' \neq A'A$.

6. Find the eigen values of $\begin{bmatrix} a & h & g \\ 0 & b & 0 \\ 0 & 0 & c \end{bmatrix}$.

7. If α, β, γ are the roots of the equation $ax^3 + bx^2 + cx + d = 0$ then find s_1, s_2 and s_3.

8. Define the standard rational integral equation.

9. If $x = a(\cos t + t\sin t),\ y = a(\sin t - t\cos t)$ then find $\frac{dy}{dx}$.

10. Write down the n^{th} derivative of $\frac{1}{ax+b}$.

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

Answer **all** questions.

11. (a) Prove that

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

Or

(b) Evaluate $\lim_{x\to 0} \frac{\tan 2x - 2\tan x}{x^3}$.

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

Or

(b) If $f : A \to B$ and $g : B \to C$ are bijections, then prove that $(g \circ f)^{-1} = f^{-1} \circ g^{-1}$.

13. (a) Show that the matrix $\begin{bmatrix} \frac{1+i}{2} & \frac{-1+i}{2} \\ \frac{1+i}{2} & \frac{1-i}{2} \end{bmatrix}$ is unitary.

Or

(b) If $\lambda_1, \lambda_2, ..., \lambda_n$ are the characteristic roots of A, then prove that $\frac{1}{\lambda_1}, \frac{1}{\lambda_2}, ..., \frac{1}{\lambda_n}$ are the characteristic roots of A^{-1}.

14. (a) Solve the equation $x^4 - 2x^3 - 21x^2 + 22x + 40 = 0$, whose roots are in A.P.

Or

(b) Solve the equation

$6x^5 + 11x^4 - 33x^3 - 33x^2 + 11x + 6 = 0$.

15. (a) If $y = x^2 e^x$ then show that

$$y_n = \frac{1}{2}n(n-1)y_2 - n(n-2)y_1 + \frac{1}{2}(n-1)(n-2).$$

Or

(b) If $f(x, y) = \log\sqrt{x^2 + y^2}$ then prove that

$$\frac{\partial^2 f}{\partial x^2} + \frac{\partial^2 f}{\partial y^2} = 0.$$

Part C $(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Prove that

$32\sin^4\theta\cos^2\theta = \cos 6\theta - 2\cos 4\theta - \cos 2\theta + 2$.

Or

(b) Show that $f : R \to (0, 1)$ defined by

$f(x) = \frac{1}{2}\left[1 + \frac{x}{1 + |x|}\right]$ is a bijection.

17. (a) Using Cayley Hamilton theorem find the inverse of the matrix $A = \begin{bmatrix} 7 & 2 & -2 \\ -6 & -1 & 2 \\ 6 & 2 & -1 \end{bmatrix}$.

Or

(b) Find the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$.

18. (a) Evaluate $\sqrt{12}$ to four decimal places by Newton's method.

Or

(b) Find the maximum and minimum values of $f(x, y) = 2(x^2 - y^2) - x^4 + y^4$.

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C–7318	Sub. Code
	80523

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

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** questions.

1. What is procedure oriented programming?

2. List any four arithmetic operators.

3. What are the places where member function is defined?

4. How arrays could be used as a member variable in a class?

5. Define the terms constructor and destructor in C++.

6. What is operator overloading?

7. What do we do if the private data needs to be inherited by a derived class?

8. What are the types of inheritance?

9. Draw the hierarchical structure of stream function for Console I/O operations.

10. Name any two format functions in I/O Stream.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain any five concepts in Object-oriented programming.

Or

(b) Explain the structure of C++ program.

12. (a) Explain about the class specifications with example.

Or

(b) What is a friend function? Explain about its merits and demerits.

13. (a) What are the restrictions and limitations of overloading operators?

Or

(b) How unary minus operator is overloaded? Explain it with an example.

14. (a) Explain virtual base class with an example.

Or

(b) Explain about multilevel inheritance with an example.

15. (a) Write short notes on file pointers and manipulators?

Or

(b) Discuss about unformatted I/O operators.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Illustrate control statements with examples.

Or

(b) Explain about identifiers and constants in C++ with examples.

17. (a) Describe the use of static data members and static member functions in a class with examples.

Or

(b) Explain type conversion in C++ with example program.

18. (a) Explain single and multiple inheritance in C++ with an example for each.

Or

(b) With examples, explain how to open, use and close a file in C++.

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C–7319	Sub. Code
	80524

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Second Semester

IT and Logistics

MATHEMATICS – II

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Find $\lim_{x \to 1} \frac{x^2 - 1}{x - 1}$ if it exists.

2. Find $\frac{dy}{dx}$ if $y = x^2 + \cos x$.

3. Evaluate $\int \left(\frac{1 - \sin x}{1 + \sin x} \right) dx$.

4. Evaluate $\int x^3 e^{x^2} dx$.

5. Solve $\left(D^2 - 5D + 6\right)y = 0$.

6. Solve $\frac{dy}{dx} - y \cot x = 2x \sin x$.

7. If $u = (x-y)^4 + (y-z)^4 + (z-x)^4$, show that $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} = 0$.

8. If $z^3 - 3yz - 3x = 0$, show that $z \cdot \frac{\partial z}{\partial x} = \frac{\partial z}{\partial y}$.

9. Define fourier series of $f(x)$ in $(c, c+2l)$.

10. Give the complete definition of a periodic function.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Evaluate $\lim_{x \to 0} \frac{3^x + 1 - \cos x - e^x}{x}$.

Or

(b) Find the n^{th} derivative of $y = x^2 e^x \cos x$.

12. (a) Evaluate $\int_0^{\frac{1}{3}} \frac{dx}{(1+x^2)\sqrt{1-x^2}}$.

Or

(b) Evaluate $\int x \sin^{-1} x \, dx$.

13. (a) Solve $xyp^2 + (3x^2 - 2y^2)p - 6xy = 0$.

Or

(b) Solve $y'' + 4y' + 13y = 2e^{-x}$ given $y(0) = 0$ and $y'(0) = -1$.

14. (a) If $x^x \cdot y^y \cdot z^z = 1$, find the value of $\frac{\partial^2 z}{\partial x \, \partial y}$ when $x = y = z = 1$.

Or

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

15. (a) Find the half range sine series of $f(x) = \sin ax$ in $(0, l)$.

Or

(b) Find the Fourier series expansion of $f(x) = x(1 - x)(2 - x)$ in (0, 2).

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) If $x = \sin t$ and $y = \sin pt$, prove that

$$x = \sin t \therefore \frac{dx}{dt} = \cos t$$

$$y = \sin pt \therefore \frac{dy}{dt} = p \cos pt .$$

Or

(b) If $u^2 = (x - a)^2 + (y - b)^2 + (z - c)^2$, prove that $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 y}{\partial z^2} = \frac{2}{u}$.

17. (a) Find a reduction formula for $I_n = \int x^n e^{ax} dx$ and use it to evaluate $\int x^4 e^{3x}\, dx$ and $\int_0^\infty x^3 e^{-2x}\, dx$.

Or

(b) Solve $\left(D^2 - 4D + 4\right)y = 3x^2 e^{2x} \sin 2x$.

18. (a) If $u = \log\left(x^3 + y^3 + z^3 - 3xyz\right)$, show that

(i) $\dfrac{\partial u}{\partial x} + \dfrac{\partial u}{\partial y} + \dfrac{\partial u}{\partial z} = \dfrac{3}{x + y + z}$

(ii) $\left(\dfrac{\partial}{\partial x} + \dfrac{\partial}{\partial y} + \dfrac{\partial}{\partial z}\right)^2 u = -\dfrac{9}{(x + y + z)^2}$.

Or

(b) Find the Fourier series of period $2l$ for the function $f(x) = x(2l - x)$ in $(0, 2l)$. Deduce the sum of $\dfrac{1}{1^2} - \dfrac{1}{2^2} + \dfrac{1}{3^2} - \ldots$

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C–7320	Sub. Code
	80532

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

IT and Logistics

PRINCIPLES OF INFORMATION TECHNOLOGY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define the term Information technology.

2. List out the elements of a computer and communication system.

3. Mention the types of application software.

4. List out any two desktop accessories and mention their use.

5. Expand and write a note on the term EDI.

6. What is the job of a MODEM?

7. What is meant by Netiquette?

8. Define Compression. List out two compressed file formats.

9. Define the term MIS.

10. Give the structure of an HTML document.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss on the ethics of IT.

Or

(b) Bring out the developments that have happened in the Communication technology.

12. (a) Brief on the features of five different types of application software.

Or

(b) Write short notes on specialized software.

13. (a) What is Video Conferencing? Explain the hardware and software requirements of it.

Or

(b) Explain the working of ISDN Lines.

14. (a) Describe the working principle of Optical Disk.

Or

(b) What are ACID properties of a DBMS? Explain.

15. (a) Write short notes on ActiveX.

Or

(b) Explain the use of any five HTML tags through illustrations.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe the six elements of a computer and communication system.

Or

(b) Discuss on the features of different types of Application software.

17. (a) Elaborate on Intellectual Property Rights.

Or

(b) Describe the working mechanism of Hard Disk and Magnetic Tape.

18. (a) Explain the various phases involved in the process of system analysis and design.

Or

(b) Write short notes on (i) Java (ii) XML.

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C–7321	Sub. Code
	80533

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

IT and Logistics

PROGRAMMING IN JAVA

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define the term Polymorphism.

2. How object oriented programming differs from procedure oriented programming?

3. Define the term static method.

4. What is the use of charAt() string handling function?

5. Write the difference between runtime and compile time errors.

6. Define the term Multithreading.

7. Write the classification of java stream classes?

8. Define: Timer class.

9. Write down the hierarchy of Java AWT.

10. How to arrange components in card layout?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a Java program to find sum of digits of a given number.

Or

(b) Differentiate between data abstraction and data encapsulation.

12. (a) Discuss about Java annotations.

Or

(b) Explain multilevel inheritance with an example.

13. (a) Distinguish between private and public access modifiers in Java.

Or

(b) Discuss about runnable interface with an example.

14. (a) Explain life cycle methods of Applet.

Or

(b) Illustrate scanner class in Java with an example.

15. (a) Discuss about border layout with an example program.

Or

(b) Explain how to create radio buttons in Java.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Elaborate on operators in Java.

Or

(b) Discuss about single inheritance in Java.

17. (a) Explain string buffer functions.

Or

(b) Write a Java program that demonstrates user defined exception.

18. (a) Write in detail about Buffered I/O streams in Java.

Or

(b) Explain the creation of menu with suitable example.

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C–7322	Sub. Code
	80535

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

IT and Logistics

STATISTICAL AND NUMERICAL METHODS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. What is a Pie diagram?

2. Find the median of eleven students given by 66, 65, 64, 70, 61, 60, 56, 63, 60, 67,62

3. Define Correlation.

4. Write down the regression line equation of y on x.

5. Define Type – I and Type – II errors.

6. Define χ^2 test of goodness of fit.

7. State Newton's Raphson method.

8. State the condition for convergence of Gauss-Seidel iterative method for solving system of equations.

9. What is the order of the error in the trapezoidal rule?

10. State Simpson's $\frac{3}{8}^{\text{th}}$ rule.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Calculate the Arithmetic mean form the following data:

Weight in kgs (x):	50	48	46	44	42	40
Number of persons (y):	12	14	16	13	11	09

Or

(b) Find the G.M and H.M of the following distribution.

x :	1	2	3	4	5
f :	2	4	3	2	1

12. (a) Find the correlation coefficient between x and y from the following data:

x :	1	3	5	8	9	10
y :	3	4	8	10	12	11

Or

(b) State the merits and demerits of rank correlation coefficients.

13. (a) An average breaking strength of steel rods is specified to be 18.5 thousand pounds. To test this is a sample of 14 rods was tested. The mean and S.D obtained were 17.85 and 19.55 respectively. Is the result of the experiment significant with 95% confidence?

Or

(b) The S.D. of a distribution of times taken by 15 workers for performing a job is 6.4 sec. Can it be taken as a sample from a population whose S.D. is 5 sec?

14. (a) Using Newton Raphson method, establish the formula $x_{n+1} = \frac{1}{2}\left(x_n + \frac{N}{x_n}\right)$ to calculate the square root of *N*.

Or

(b) Solve the system by using Gaussian elimination

$$x + 2y + z = 3$$
$$2x + 3y + 3z = 10 .$$
$$3x - y + 2z = 13$$

15. (a) Compute the value of the definite integral $\int_4^{5.2} \log_e x \, dx$ using

(i) Simpson's $\frac{1}{3}$ rule

(ii) Simpson's $\frac{3}{8}$ rule

Or

(b) Explain Runge-kutta method.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Find (i) mean (ii) range (iii) S.D (iv) mean deviation about the mean and (v) coefficient of variation for the following marks of 10 students 20, 22. 27, 30, 40, 48, 45, 32, 31, 35.

Or

(b) The following data relate to the marks of 10 students in the internal test and the university examination for the maximum of 50 in each.

Internal Marks	25	28	30	32	35	36	38	39	42	45
University Marks	20	26	29	30	25	18	26	35	35	46

(i) Obtain the regression equation.

(ii) Determine the most likely internal mark for the University mark of 25.

17. (a) A group of 10 rats fed on diet A and another group of 8 rats fed on diet B, recorded the following increase in weight.

Diet A	5	6	8	1	12	4	3	9	6	10
Diet B	2	3	6	8	10	1	2	8		

Find if the variances are significantly different.

Or

(b) Using Gauss Jordan method, find the inverse of $A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$.

18. (a) Using Newton's method, find the real root of $x \log_{10} x = 1.2$ correct to five decimal Places.

Or

(b) Dividing the range into 10 equal parts, find the value of $\int_0^{\frac{\pi}{2}} \sin x \, dx$ by

(i) Trapezoidal rule

(ii) Simpson's rule

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C–7323	Sub. Code
	80537

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

IT and Logistics

CONSTITUTION OF INDIA

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Dr. B.R. Ambedkar.

2. Habeas Corpus.

3. Who is eligible Voter?

4. Speaker (Lok Sabha).

5. Vice president (Rajya Sabha).

6. The first amendments.

7. Independent Minister.

8. Deputy Speaker.

9. The first women judge in Supreme Court.

10. Zero hour.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is an executive?

Or

(b) Why do we need a two houses of parliament?

12. (a) What is the role of Dr. Rajendra Prasad in Indian Constitution?

Or

(b) Write a note on District court.

13. (a) Explain selection of the speaker in parliament?

Or

(b) Write a note on Rajya Sabha member.

14. (a) How is Supreme court judge selected?

Or

(b) Explain the function of opposition leader in legislative.

15. (a) What is the role of reservation policy in India?

Or

(b) List out the qualification of high court judge.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Which of the fundamental rights is in your opinion the most important right? Summarise its provisions and give arguments to show why it is most important?

Or

(b) What are the different provisions in the constitution in order to maintain the independence of judiciary?

17. (a) How do ament the constitution? Why have there been so many amendments?

Or

(b) Explain the reason for requiring special majority for amending the constitution.

18. (a) Why is it said that the making of the Indian constitution was unrepresentative? Does that make the constitution unrepresentative? Give reasons for your answer.

Or

(b) Explain the difference between Indian Constitution and Western ideas in the light of.

(i) Understanding of secularism

(ii) Articles 370 and 371

(iii) Affirmative action

(iv) Universal adult franchise.

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C–6033	Sub. Code
	80542

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

IT and Logistics

COMPUTER NETWORKS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Mention the uses of computer networks.

2. Expand ISDN.

3. What are called Error correcting codes?

4. What is ALOHA?

5. Define Tunneling.

6. Write down the ATM cell format.

7. What do you mean by crash recovery?

8. Differentiate TCP and UDP.

9. What is SNMP?

10. Mention any two data compression standards.

Part B (5 × 5 = 25)

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

11. (a) Discuss about various transmission media.

Or

(b) Write short notes on communication satellites.

12. (a) Explain one bit sliding window protocol.

Or

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

13. (a) Briefly explain Distance vector routing algorithm.

Or

(b) Write about routing and switching techniques.

14. (a) Describe the elements of transport protocols.

Or

(b) How will you measure the network performance? Explain.

15. (a) What is cryptography? Explain the various methods of cryptography.

Or

(b) Describe the components of E-mail.

Part C (3 × 10 = 30)

Answer **all** questions.

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

Or

(b) Describe petri net models.

17. (a) Explain the working of carrier sense multiple access protocols.

Or

(b) Explain any two congestion control algorithms.

18. (a) Describe the concept of Multiplexing with neat sketch.

Or

(b) Explain Secret key and public key algorithms.

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C–6034	Sub. Code
	80543

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

IT and Logistics

WEB TECHNOLOGIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define the term WWW and its terminology.

2. What is the difference between HTML and other programming languages?

3. Name the types of style sheet?

4. How a style sheet varies from a normal HTML code?

5. Write an example to add a font color in a style sheet.

6. Give an example to apply text formatting in a style sheet.

7. Differentiate between java script and html and where it gets implemented?

8. What is meant by data type?

9. What are called objects in HTML?

10. What is screen object?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Differentiate between internet and intranet and mention their properties.

Or

(b) What are the major types of protocols used in internet? Explain.

12. (a) Elaborate the basic rules to add a style sheet in an html document.

Or

(b) Differentiate between Internal and external style sheets.

13. (a) Enunciate the box and list properties of a style sheet.

Or

(b) Describe the font and color properties of a style sheet with an example.

14. (a) Briefly explain about the dialog box in java script.

Or

(b) Explain the types of expressions used in java script.

15. (a) Elucidate about cookies.

Or

(b) Brief on form objects with proper examples.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain in detail about HTML forms with an example program.

Or

(b) Describe how a graphics can be added to html document with suitable program.

17. (a) Elaborate on inline style sheets with proper examples.

Or

(b) Enunciate about functions and its properties in java script.

18. (a) Elaborate on windows and document object with proper examples.

Or

(b) Explain in detail about built-in and user defined objects with suitable examples.

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C–6035	Sub. Code
	80544

B.Sc. DEGREE EXAMINATION, APRIL 2022.

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. Define DBMS.

2. What is an entity relationship model?

3. Write the syntax to create a table.

4. Define functional dependency.

5. What are complex types?

6. List the types of storage devices.

7. What is known as search key?

8. Define atomicity.

9. Compare single user and multi user system.

10. Define fine granularity parallelism.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the various disadvantages in the file system and explain how it can be overcome by the database system.

Or

(b) Give a short note on relational database.

12. (a) Write the basic structure of SQL. Give example.

Or

(b) Write a note on embedded SQL.

13. (a) What is object relational data model? Explain.

Or

(b) Give a brief on file organization.

14. (a) What is sorting? Give example.

Or

(b) Write a note on concurrency control.

15. (a) Briefly explain centralized and client-server architecture.

Or

(b) Differentiate homogeneous and heterogeneous databases.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about DBMS components.

Or

(b) Construct an ER diagram for an employee payroll system.

17. (a) Define normalization. Explain various normal forms.

Or

(b) Describe DDL and DML commands with example.

18. (a) Discuss briefly on indexing and hashing.

Or

(b) When do you say that the system is in deadlock? Explain.

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C–7327	Sub. Code
	80551

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

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. Define the term: Logistics.

2. What are the various customer service elements?

3. What do you mean by work in process inventory?

4. State any four reasons for logistics outsourcing.

5. What types of equipment is involved in material handling?

6. What are the four economic benefits of a warehouse?

7. What is the primary purpose of logistical packaging?

8. What do you mean by packaging cost?

9. Why do we need global logistics?

10. What are the components of integrated logistics?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the major functions of logistics with examples.

Or

(b) Explain the objectives of logistics management.

12. (a) Briefly discuss the benefits of holding inventories.

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) Load unitization and logistical packaging have close relationship – Explain.

Or

(b) Write a short note on: Container Classification.

15. (a) Discuss the various objectives of performance measurement system and the perspective of various performance measure with respect logistics operations.

Or

(b) Briefly discuss the roles of 3PL and 4PL in supply chain management.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the different phases of customer service.

Or

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

17. (a) What are the various materials in logistical packaging? Discuss their relative advantages and disadvantages.

Or

(b) Discuss the various types of material handling equipments.

18. (a) Explain the steps in Activity Based Costing (ABC) model.

Or

(b) Explain the internal and external strategic issues in managing global logistics operations.

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C–7328	Sub. Code
	80552

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

IT and Logistics

INTRODUCTION TO SHIPPING

(2019 onwards)

Duration: 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the advantages of sea transport?

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

3. What does the tonnage mean?

4. State the types of chartering.

5. What is liner container?

6. What are freight tariffs in shipping?

7. How does a ship broker represent?

8. What is trade geography?

9. How do you account for shipping expenses?

10. What is the purpose of Hamburg rules?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly discuss the history of shipping industry.

Or

(b) The transport of containers by ship is only a small part of the transport chain- Explain and elaborates on this.

12. (a) What is dry cargo market? Briefly discuss about the different types of dry cargo ship.

Or

(b) How do you determine a vessel's load line length?

13. (a) Name and explain some characteristics of a crude oil tanker.

Or

(b) How are the containers guided into the hold during the loading and discharging?

14. (a) Discuss the stages of ship sale and purchase.

Or

(b) Write a short note on: Maritime Geography.

15. (a) What does the cash flow stands for? What is the purpose of cash flow projection in a shipping agency?

Or

(b) What is maritime law TORT? What is the scope of TORT?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Who are the participants in the shipping market? Discuss the different shipping markets.

Or

(b) What are the different types of ships? Explain any three types in details.

17. (a) Describe the different forms of charter parties used in maritime transport. Select any one of the charter parties of your choice and explain the reasons for its use.

Or

(b) What is a Bill of lading? Briefly explain about the different types of Bill of Lading.

18. (a) Briefly discuss the roles and functions of the practitioners (principals and intermediaries) in shipping business.

Or

(b) List out the types of maritime contract and explain any two types of contracts in the shipping business.

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C–7329	Sub. Code
	80553

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

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 you mean by customs law?
2. What is customs port?
3. What is illegal import?
4. What has authority to exempt goods from customs duty?
5. Define: Tariff Value
6. How do you get a refund on customs duty?
7. What is manifest export?
8. What is required for customs clearance for export?
9. Who is the proper officer to grant permission for transshipment of good without payment of duty under SECTION 54 of the customs Act 1962?
10. What are the rates of drawback under Section 75 of the act?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the various officers of Customs department with reference to U/s 3 to U/s 6 of Customs Act, 1962.

Or

(b) Discuss the precautions to be taken by a person acquiring notified goods.

12. (a) Write a note on: Customs Act, 1962 Sections 11C, 11E, and 11F not to apply to goods in personal use.

Or

(b) Explain the Power of Central Government to notify goods (Section 11B).

13. (a) Briefly explain the provisions regarding the 'specified and notified goods' under Customs Duty Act. 1962.

Or

(b) Briefly explain Section 28BA of Customs Act, 1962-provisional attachment to protect revenue in certain cases.

14. (a) Explain the provisions relating to conveyances carrying imported or exported goods.

Or

(b) What is the procedure for export clearance? Explain.

15. (a) Explain the Section 53 of customs Act – Transit of goods without payment of duty.

Or

(b) Explain the Section 73 of Customs Act, 1962 – Cancellation and return of warehousing bond.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the powers of Central Government to prohibit importation and exportation of goods? Discuss with few examples.

Or

(b) Discuss the provisions of Customs Act, 1962 relating to detection of illegal imported goods and prevention of the disposal thereof

17. (a) What is Advance Ruling? Which are the provisions applicable to Advance Ruling?

Or

(b) What is the procedure for clearance of imported goods? What are the measures to detect illegally imported goods?

18. (a) Discuss the various provisions related to Warehousing in Customs Act. 1962.

Or

(b) Explain the various provisions related to refund under Customs Act, 1962.

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C–7330	Sub. Code
	80554

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

IT and Logistics

WAREHOUSING AND INVENTORY MANAGEMENT

(2019 onwards)

Duration: 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Warehouse?

2. List out the benefits of ideal warehouse.

3. What is the need of warehouse?

4. What is warehouse operation?

5. What is warehouse storage system?

6. List out the storage systems used for small items.

7. A star rated split air conditioner is not a star rated split air conditioner when it is Mumbai, whereas when the demand is in Chennai – Comment.

8. What is WIP Inventory?

9. Why is RFID better than Bar Coding?

10. What is ABC analysis?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the various factors to be considered in the selection of the location of the warehouse.

Or

(b) Briefly discuss the characteristics of an efficient warehouse.

12. (a) What are the functions to be performed in a Warehouse?

Or

(b) Explain the factors influence the number of warehouses a firm chooses to maintain.

13. (a) What are centralized and decentralized warehouse? Discuss their advantages and disadvantages.

Or

(b) What is palletized storage? Briefly explain the various storage systems available for the palletized goods.

14. (a) Briefly discuss the functions of inventory.

Or

(b) Briefly discuss the benefits achieved by implementing warehouse management system.

15. (a) Compare Independent Demand System and Dependent Demand System.

Or

(b) List out the various types of conveyors. Briefly discuss any three types of conveyors.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) List out the different types of Warehouses? Briefly discuss.

Or

(b) Discuss the factors determining the location of a Warehouse.

17. (a) List out the types of inventory. Explain any three types of inventory.

Or

(b) What are the various categories of selective inventory control? Explain.

18. (a) Write a note on:

(i) Economic Order Quantity (EOQ)

(ii) Just In Time (JIT) system.

Or

(b) Write a note on:

(i) Material Requirement Planning (MRP)

(ii) Distribution Requirement Planning (DRP).

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C–7331	Sub. Code
	80555

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

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. What is distribution requirement planning?
2. Define the term distribution channel.
3. List any two functions of warehousing.
4. Define Network.
5. State the essential features of transport system.
6. List any four modes of transportation.
7. Define Value of Travel Time (VTT).
8. What is transit capital?
9. List any two transportation softwares available in India.
10. What do you mean by fleet management?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the channels or supply chain distribution.

Or

(b) Discuss the importance of distribution network strategies.

12. (a) Describe various factors influencing distribution network design.

Or

(b) Framework for network design decisions.

13. (a) Explain the process of selecting suitable transportation mode.

Or

(b) Write note on principles of transportation.

14. (a) Summaries the factors influencing transportation cost.

Or

(b) Explain the principles of good routing in transportation.

15. (a) Elucidate the role of fleet manager.

Or

(b) Discuss the benefits of transportation software.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the problems associated with fleet maintenance.

Or

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

17. (a) Write note on network optimization models and discuss its applications.

Or

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

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

Or

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

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C–7332	Sub. Code
	80556

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

IT and Logistics

LINER TRADE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Liner Trade.
2. What is meant by Ro-Ro ship?
3. Mention the major types of cargo transported through the shipping industry.
4. What is Port and Terminal Management?
5. Explain the term Containerization in Trade.
6. Expand the terms: FCL & LCL.
7. What is bill of lading and what is its purpose?
8. Explain Paperless Trading.
9. What is the process of fund transfer from one country to another?
10. What is the main aim of using ISPS Code in Shipping?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the major services offered by liners.

Or

(b) Describe the Basic Design of Container Vessels.

12. (a) Explain the role of ship officers.

Or

(b) What are the advantages and disadvantages of independent ship management? Explain.

13. (a) Explain the advantages and disadvantages of containerization.

Or

(b) Explain the approaches followed for container control.

14. (a) Explain different types of bill of lading. Also list out the sections found in a bill of lading.

Or

(b) What are the various international conventions that govern the common carriage of goods by sea? Explain.

15. (a) Discuss different methods of payments in International trade.

Or

(b) What are the most common forms of maritime law? Explain with examples.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the major types of container ships used in shipping industry.

Or

(b) Define intermodalism and list the conditions around which intermodalism is to be organized. Describe the components involved in intermodal transport.

17. (a) Explain the documentation procedure involved in liner trade.

Or

(b) Explain different shipboard / cargo handling equipments in liner trade.

18. (a) Illustrate the role of a ship management company in shipping business.

Or

(b) What are INCO terms? What is the purpose of INCO terms? Define and explain the INCO terms.

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C–7013	Sub. Code
	16/17/23/25/ 26/27/29

COMMON FOR ALL U.G DEGREE COURSES
EXAMINATION, NOVEMBER 2022

First/Second Semester

ENVIRONMENTAL STUDIES

(2019/2020 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Nonrenewable resources
2. Ecosystem
3. Food Chain of forest ecosystem.
4. Pandemic Emergencies.
5. Red Data Book
6. Hot spots
7. Climate Change
8. Deforestation
9. Biodiversity
10. Acid Rain

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Differentiate renewable and nonrenewable energy resources.

Or

(b) Write notes on structure and functions of grassland ecosystem.

12. (a) Write notes on Food Webs of Forest Ecosystem with suitable examples.

Or

(b) Write notes on Genetic, Species and Ecosystem Diversity.

13. (a) Write short notes on Food resources and its problems associated with them.

Or

(b) Write notes on land resources and problem associated with them.

14. (a) Write notes on thermal pollution.

Or

(b) Write notes on energy pyramids with suitable examples.

15. (a) Explore the threats to biodiversity.

Or

(b) Write note on man-made disaster with special reference to strike.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Write an essay on multidisciplinary nature of environmental studies and about the need for public awareness on environment.

Or

(b) Write an essay on Water Resources and problem associated with over-utilization of various water resources.

17. (a) Write an essay on Biogeographical classification of India.

Or

(b) Write an essay on values of biodiversity.

18. (a) Write an essay on causes, effects and control measures of water pollution.

Or

(b) Enumerate various strategies in managing disasters caused due to natural calamities.

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C–5664	Sub. Code
	16/17/23/25/ 26/27/29

Common for All U.G. B.Sc./B.B.A. DEGREE EXAMINATION, APRIL 2022

First/Second Semester

ENVIRONMENTAL STUDIES

(2019/2020 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. ZSI.

2. WII.

3. What is renewable energy?

4. Food web.

5. Pyramid of numbers in aquatic ecosystem.

6. Red data book.

7. List out any five Endemic species of India.

8. List out marine pollutants.

9. *Ex Situ* Conservation.

10. Enlist Option Values of Biodiversity.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write notes on definition, scope and importance of environmental studies.

Or

(b) Write notes on soil erosion and desertification.

12. (a) Write notes on energy flow in the ecosystem.

Or

(b) Write notes on threads to biodiversity.

13. (a) Write notes on Biodiversity at Global, National and Local levels.

Or

(b) Write notes on various strategies of conservation of Biodiversity.

14. (a) Write notes on ecological pyramids.

Or

(b) Write notes on air pollution.

15. (a) Write notes on noise pollution.

Or

(b) Write notes on effects and control measures of nuclear hazards.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on the multidisciplinary nature of Environmental Studies.

Or

(b) Write an essay on the following resources with special emphasis to how they are overexploited/utilized which in turn damage the environment, (i) Forest Resources and (ii) Food Resources.

17. (a) Write an essay on "India is a mega-diversity nation".

Or

(b) Write an essay on Biodiversity and their values.

18. (a) Write an essay on causes, effects and control measures of (i) Marine Pollution and (ii) Water Pollution.

Or

(b) Write an essay on concept, structure and function of ecosystem.

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