C–3512	Sub. Code
	96413

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

First Semester

PROGRAMMING IN C

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is type casting?

2. Differentiate between local and global variable in C.

3. Mention the various decision making statement available in C.

4. How to initialize an array?

5. What is the use of keyword 'return'?

6. How will you define a function in C?

7. How can you access the members of union?

8. What is the difference between an array and pointer?

9. What is dynamic memory allocation?

10. What is macro? Write the advantage of using it.

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

Answer **all** questions.

11. (a) Describe the basic structure of 'C' program.

Or

(b) Explain in detail about the constants and expressions in 'C'.

12. (a) Write a C program that displays numbers like a pyramid as shown below:

```
        1
    2       2
3               3
```

Or

(b) Define the term array. Write a 'C' program to arrange *n* numbers in ascending order.

13. (a) How to pass strings to functions? Explain with an example.

Or

(b) Brief on call by value and call by reference in parameter passing.

14. (a) What are pointers? When and why they are used? Illustrate with an example program.

Or

(b) How structure members are accessed and processed?

15. (a) Write a program to copy the contents of one text file to another.

Or

(b) Describe the preprocessor directives in C.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the various types of operators in 'C' language.

Or

(b) Explain all the formatted and unformatted input and output statements.

17. (a) Discuss on various looping statements in C.

Or

(b) Explain the use of string handling functions with examples.

18. (a) Write a C program to read and display the data of ten employees using an array of structure with Id, Name, Address and Pay members.

Or

(b) Explain how defining, opening and closing a file are carried out in 'C' with examples.

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C–3513	Sub. Code
	96415

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

First Semester

ALGEBRA AND CALCULUS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Write the condition that the roots of the equation $ax^3 + 3bx^2 + 3cx + d = 0$ are in geometric progression.

2. If α, β, γ are the roots of the equation $x^3 + px^2 + qx + r = 0$, find $\Sigma\alpha^2\beta$.

3. Define rank of matrix.

4. Find the characteristic equation of $\begin{pmatrix} 1 & 2 \\ 3 & 1 \end{pmatrix}$.

5. Define concavity.

6. If $x^3 + y^3 + 3axy = 0$, find $\frac{dy}{dx}$.

7. Prove that $\int_0^{\pi/2} \sin^n dx = \int_0^{\pi/2} \cos^n x dx$.

8. Evaluate $\int xe^x dx$,

9. Solve $dy/dx + \dfrac{1+y^2}{1+x^2} = 0$.

10. Solve $(D^2 - 5D + 6) = 0$.

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

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

11. (a) Solve the equation $81x^3 - 18x^2 - 36x + 8 = 0$ whose roots are in harmonic progression.

Or

(b) Diminish the roots of $x^4 - 5x^3 + 7x^2 - 4x + 5 = 0$ by 2.

12. (a) Find the rank of the matrix $\begin{bmatrix} 4 & 2 & 1 & 3 \\ 6 & 3 & 4 & 7 \\ 2 & 1 & 0 & 7 \end{bmatrix}$.

Or

(b) For what value of η the equations $x + y + z = 1$; $x + 2y + 4z = \eta$; $x + 4y + 10z = \eta^2$ are consistent.

13. (a) Show that every point on the curve $y = b\sin(x/a)$ where curve meets the $x-$axis is a point of inflexion.

Or

(b) If $V = (x^2 + y^2 + z^2)^{1/2}$, show that V satisfies Laplace equation.

14. (a) Evaluate $\int \frac{2x+1}{\sqrt{x^2+x+1}} dx$.

Or

(b) Evaluate $\int_0^{\pi/4} \log(1+\tan\theta)\, d\theta$.

15. (a) Solve $(1 + y^2)\, dx + (x - \tan^{-1} y)\, dy = 0$.

Or

(b) Find the particular integral of $(D^2 - 4D + 3)y = e^x \cos 2x$.

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

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

16. (a) If $\alpha, \beta, \gamma, \delta$ be the roots of the biquadratic equation $x^4 + px^3 + qx^2 + rx + s = 0$, find (i) $\Sigma\alpha^2$ (ii) $\Sigma\alpha^2\beta\gamma$ (iii) $\Sigma\alpha^2\beta^2$ (iv) $\Sigma\alpha^3\beta$ and (v) $\Sigma\alpha^4$.

Or

(b) Use Cayley – Hamilton theorem for $A = \begin{pmatrix} 1 & 2 & 3 \\ 2 & -1 & 4 \\ 3 & 1 & -1 \end{pmatrix}$ find A^{-1} and A^4.

17. (a) Find the eigen values and eigen vectors of $A = \begin{pmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{pmatrix}$.

Or

(b) A cone is inscribed in a sphere of radius a. Prove that its volume is maximum when its altitude in $4a/3$.

18. (a) Find the Fourier series for the function $f(x) = x^2$ when $-\pi \le x \le \pi$ and deduce that $\frac{1}{1^2} + \frac{1}{3^2} + \frac{1}{5^2} + \cdots = \frac{\pi^2}{8}$.

Or

(b) Solve $(D^2 - 6D + 13)y^2 = 8e^{3x} \sin 2x$.

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C–3514	Sub. Code
	96423

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Second Semester

PROGRAMMING IN C++

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the basic principles of OOP?

2. Write if statement to check whether a given number is even or odd.

3. What is meant by inline function?

4. State the use of static data member of a class.

5. What is the use of this pointer?

6. What is the purpose of abstract class?

7. Draw hierarchy of stream classes to do operations on files.

8. What is file pointer?

9. What is meant by exception handling?

10. What is the need for template function in C++? What is the advantage of using it?

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

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

11. (a) Explain various features of programming language.

Or

(b) Differentiate between C and C++.

12. (a) Explain the general form of a class with an example.

Or

(b) Write a C++ program to compute roots of a quadratic equation by initializing the object using default constructor.

13. (a) Explain the concept of virtual base class.

Or

(b) Explain briefly about virtual function with suitable example program.

14. (a) Write a program to count number of occurrences of a particular character in text file.

Or

(b) Explain tellg and seekp functions. Give a suitable example.

15. (a) Explain function template with suitable example.

Or

(b) Though an example, illustrate the working of nested try blocks and re-throwing of an exception.

Part C (3 × 10 = 30)

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

16. (a) Discuss in detail about the basic concepts of object oriented programming.

Or

(b) Write short notes on:

(i) Dynamic initialization of objects

(ii) Destructors.

17. (a) Discuss the various types of inheritance with the help of suitable example.

Or

(b) Explain formatted console I/O operations.

18. (a) Write a program that opens two text files for reading data. It creates a third file that contains the text of first file and then that of second file (text of second file to be appended after text of the first file, to produce the third file).

Or

(b) Explain the mechanism of keywords try, throw and catch to handle exceptions in C++. Write program segments to illustrate.

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C–3515	Sub. Code
	96425

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Second Semester

NUMERICAL ANALYSIS AND STATISTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Write the Newton – Raphson formula.

2. Find $\Delta^4 y_0$.

3. Give the formula for $\frac{d^2y}{dx^2}$ at $x = x_n$.

4. What is partial pivoting?

5. Write the general Euler's formula.

6. State Adam's predictor – corrector formulae for the solution of the equation $y' = f(x, y),\ y(x_0) = y_0$.

7. The heights of 10 students in c.m.'s chosen at random are given by 164, 159, 162, 168, 165, 170, 168, 171, 154, 169. Calculate arithmetic mean.

8. Show that the weighted A.M. of first n – natural numbers whose weights are equal to the corresponding numbers in equal to $1/3(2n+1)$.

9. State whether the following probability distribution are admissible or not.

x	-1	0	1
$p(x)$	0.4	0.4	0.3

10. Compute the mode of a binomial distribution $B(7, 1/4)$.

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

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

11. (a) Find a root, correct to three decimal places and lying between 0 and 0.5, of the equation $4e^{-x}\sin x - 1 = 0$.

Or

(b) Evaluate $\Delta(\tan^{-1} x)$.

12. (a) A rod is rotating in a plane about one of its ends. The angle θ (in radian)at different time + seconds are given below.

t	0	0.2	0.4	0.6	0.8	1.0
θ	0.0	0.15	0.5	1.15	2.0	3.20

Find its angular velocity and angular acceleration when $t = 0.6$.

Or

(b) Use Gauss elimination to solve the system.

$2x + y + z = 10$; $3x + 2y + 3z = 18$; $x + 4y + 9z = 16$.

13. (a) Given the differential equation $y''-xy'-y=0$ with the conditions $y(0)=1$ and $y'(0)=0$, use Taylor's series method to determine the value of $y(0.1)$.

Or

(b) Use Runge – Kutta fourth order formula to find $y(0.2)$ given that $y'=\frac{y^2-x^2}{y^2+x^2}$, $y(0)=1$.

14. (a) Find the mean, median and mode of the following frequency distribution.

Class	20-24	25-29	30-34	35-39
Frequency	3	5	10	20
Class	40-44	45-59	50-54	55-59
Frequency	12	6	3	1

Or

(b) The two variable x and y have the regression lines $3x+2y-26=0$ and $6x+y-31=0$.

Find

(i) the mean values of x and y.

(ii) the correlation co-efficient between x and y.

(iii) the variance of y if the variance of x is 25.

15. (a) An insurance agent accepts policies of 5 men all of identical age and in good health. The probability that a man of this age will be alive 30 years in 2/3. Find the probability that in 30 years (i) all five men (ii) atleast one man (iii) at most three will be alive.

Or

(b) Between the hours 2 pm and 4 pm the average number of phone calls per minute coming into the switch board of a company is 2.35. Find the probability that during one particular minute there will be atmost 2 phone calls.

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

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

16. (a) The table below gives the values of $\tan x$ fro $0.10 \le x \le 0.30$.

x	0.10	0.15	0.2	0.25	0.30
$y = \tan x$	0.1003	0.1511	0.2027	0.253	0.3093

Find (i) tan 0.12 (ii) tan 0.26 (iii) tan 0.40 (iv) tan 0.50

Or

(b) Solve the system using both Jacobi and Gauss – Seidel method.

$6x + y + z = 20$; $x + 4y - 5z = 6$; $x - y + 5z = 7$.

17. (a) Given the initial value problem defined by $y' = y^2 + xy$, $y(0) = 1$ find, by Taylor's series, the values of $y(0.1), y(0.2)$ and $y(0.3)$. Use these values to compute $y(0.4)$ by Milne's formulae.

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
University marks	20	26	29	30	25
Internal marks	36	38	39	42	45
University marks	18	26	35	35	46

(i) Obtain the two regression equations and determine.

(ii) The most likely internal mark for the university mark of 25.

(iii) The most likely university mark for the internal mark of 30.

18. (a) A programmer while writing a program for correlation co-efficient between two variables x and y from 30 pairs of observations obtained the following results $\Sigma x = 300; \Sigma x^2 = 3718; \Sigma y = 210;$ $\Sigma y^2 = 2000; \Sigma xy = 2100$. At the time of checking it was found that he had capital down tow pairs (x_i, y_i) are (18, 20) and (12, 10) instead of the correct values (10, 15) and (20, 25). Obtain the correct value of the correlation co-efficient.

Or

(b) Find the probability of getting between 3 heads and 6 heads in 10 tosses of a fair coin using (i) binomial distribution (ii) the normal approximation to the binomial distribution.

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C–3516	Sub. Code
	96432

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Third Semester

DIGITAL COMPUTER FUNDAMENTALS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Convert 932_{10} to octal number.

2. Expand ASCII and EBCDIC.

3. State the associative property of Boolean algebra.

4. What is sum of products?

5. What are the classification of sequential circuit?

6. Define flip-flop.

7. What is carry?

8. Define registers.

9. What is 2's complement?

10. Define IEEE floating point single precision standard.

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

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

11. (a) Write the use of complements.

Or

(b) Perform the following :

(i) $1011_2 + 1110_2$

(ii) $127_{10} - 63_{10}$ (subtraction in binary number system).

12. (a) State and explain De Morgan's theorem.

Or

(b) Prove that

$$ABC + AB\overline{C} + A\overline{B}C + \overline{A}BC = AB + AC + BC.$$

13. (a) Give a note on Encoder.

Or

(b) What are gated flip flops? Explain.

14. (a) With a neat sketch explain half adder circuit.

Or

(b) Draw and explain half subtractor.

15. (a) What are fixed and floating point numbers? Explain.

Or

(b) With example explain 1's and 2's complement representation.

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

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

16. (a) Illustrate conversion from one base to another base with examples.

Or

(b) Explain about numeric and character codes.

17. (a) Simplify the following expression using K-Map.

$F(P, Q, R, S) = \Sigma (0, 2, 5, 7, 8, 10, 13, 15)$

Or

(b) Explain Master slave flip flop with example.

18. (a) Describe shift registers and its types.

Or

(b) Elaborate on error detection codes.

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C–3517	Sub. Code
	96433

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Third Semester

JAVA PROGRAMMING

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term constant.

2. Differentiate between primitive and derived casting.

3. What is the use of Bitwise AND (&) operator?

4. Write the syntax of if else statement.

5. Define the method substring.

6. What is the difference between final and static class?

7. What are the types of thread priority?

8. Define runtime exception.

9. What is the use of paint method?

10. What are the attributes used in draw polygon method?

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

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

11. (a) Explain the concept involved in OOP.

Or

(b) Discuss about the datatypes available in java.

12. (a) Write a note on logical operators with an example program.

Or

(b) Write a java program to check the given number is positive, negative and zero.

13. (a) Describe the concept of method overriding with an example.

Or

(b) Explain one dimensional array with an example.

14. (a) Explain what is predefined package in java.

Or

(b) Write a note on try and catch blocks with an example.

15. (a) How do applets differ from applications?

Or

(b) Write in detail about different font methods available in AWT.

Part C (3 × 10 = 30)

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

16. (a) Write a Java program to add three numbers using command line arguments.

Or

(b) Explain in detail about

(i) simple if statement

(ii) else if ladder statement with suitable examples.

17. (a) How to create and implement two dimensional arrays in java? Explain it with an example.

Or

(b) Compare while and do while loop with suitable examples.

18. (a) What is the use of synchronized keyword? Explain how it is implemented in java with an example.

Or

(b) Explain abstract methods and abstract classes with examples.

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	96434

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Third Semester

DATA STRUCTURES AND ALGORITHMS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Differentiate between linear and non-linear data structure.

2. List few common data structures.

3. What is circular queue? How differs from normal queue?

4. Write the procedure to push an element into a stack.

5. Define non-linear data structure.

6. Write a non recursive pseudo code for post order traversal of binary tree.

7. List out the types of sorting.

8. What is insertion sort? How many passes are required to sort the elements?

9. Define the term algorithm.

10. Define the term space complexity.

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

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

11. (a) Write short notes on the terms predecessor and successor.

Or

(b) How to access a particular element in a list? Explain with suitable example.

12. (a) Explain infix to postfix conversion algorithm.

Or

(b) What are enqueue and dequeue operations? Explain briefly.

13. (a) Explain different types of binary trees.

Or

(b) Brief on collision Resolution techniques in hashing.

14. (a) Sort the following elements using quick sort.

24,56,88,29,97,40,69,57,12,38

Or

(b) Write merge sort algorithm and its complexity. Illustrate its working principle with n example.

15. (a) Explain he Big-O asymptotic notation used to specify the growth rate of functions.

Or

(b) Write short notes on Omega and Theta notations.

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

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

16. (a) With examples, explain various operations on the list.

Or

(b) Give an algorithm to perform following operations in a singly linked list: i. Insert a new node after a given node. ii. Delete last node iii. Count the number of elements in the list.

17. (a) What is Binary search tree? Explain insertion and deletion algorithms with examples.

Or

(b) Explain Dijkstra's algorithm to find the shortest path.

18. (a) Explain sequential search and binary search with the help of an example.

Or

(b) How do you find the complexity of an algorithm? What is the relationship between the time and space complexities of an algorithm? Justify your answer with an example.

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	96437

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Third Semester

APPLIED PHYSICS - I (Allied)

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. State gauss law.
2. Define capacitance.
3. Give the type of magnetic materials with examples.
4. What is mean by permeability?
5. Define current.
6. State kirchhoff's voltage law.
7. Explain the concept of eddy current.
8. Draw the circuit for mutual inductance.
9. Define Q factor.
10. Difference between resistance and impedance.

Part B (5 × 5 = 25)

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

11. (a) (i) State equipotential surface.

(ii) Define electrostatic potential.

Or

(b) Explain the capacitors in series and parallel circuits.

12. (a) Give relation between potential and intensity.

Or

(b) Give a short derivation of magnetic shell and its potential at any point.

13. (a) Discuss in detailed about wheatstone bridge.

Or

(b) (i) State Fleming's Left hand rule.

(ii) State Fleming's Right hand rule.

14. (a) Write short notes on relation between induced emf and mutual inductance.

Or

(b) Explain the concept of coefficient of coupling.

15. (a) Discuss shortly about A/C circuit with single and double components.

Or

(b) Explain choke series and parallel resonance circuit.

Part C (3 × 10 = 30)

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

16. (a) Elaborate gauss theorem and its application.

Or

(b) Properties of dia, para and ferro magnetic materials.

17. (a) State Ohm's law and discussed in details about carey foster's bridge.

Or

(b) Explain the Anderson's methods of coefficient of mutual inductance.

18. (a) Define Wattless current and derive the power factor derivations.

Or

(b) Explain the principle of capacitor. Write short notes on types of capacitance.

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	96442

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fourth Semester

DATABASE MANAGEMENT SYSTEMS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is a relation?

2. What is an entity?

3. Define the term first normal form.

4. What is meant by decomposition?

5. Give two examples for network types.

6. What do you mean by intra-query parallelism?

7. What is a primary key?

8. Write down the syntax for creating a sequence in oracle.

9. What is called trigger?

10. Define the term cursor.

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

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

11. (a) Describe the different views of data.

Or

(b) Write short notes on transaction management system.

12. (a) Illustrate the processes of decomposition using functional dependencies.

Or

(b) Explain 4^{th} normal form with an example.

13. (a) Discuss the merits of client/server architecture.

Or

(b) Explain the query processing with the help of a diagram.

14. (a) Explain the following SQL commands with example.
(i) Create Table.
(ii) Insert into table
(iii) Delete from table

Or

(b) What is synonym? How will you create a synonym? Explain with an example.

15. (a) What are stored procedures in PL/SQL? Explain it with a pseudocode.

Or

(b) List and explain the different types of cursor with examples.

Part C (3 × 10 = 30)

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

16. (a) Discuss on:

(i) Database design

(ii) Schema and subschema.

Or

(b) Describe the E-R model with neat sketch.

17. (a) Explain database design process and its issues.

Or

(b) Discuss on distributed query processing with neat sketch.

18. (a) Explain the various DDL commands with syntax and example.

Or

(b) Explain packages in PL/SQL with a sample code.

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	96443

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fourth Semester

VISUAL BASIC

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is control array?

2. Define menus.

3. Write a note on text boxes.

4. Mention the use of "The Immediate Window".

5. Give the difference between option button and checkbox.

6. Define selection and mention various types of section.

7. What is the concept of MDI form?

8. List out the database accessing methods.

9. What is the utility of status bar control?

10. What is ActiveX control?

Part B (5 × 5 = 25)

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

11. (a) What is the principle difference between DO while and DO unit LOOP? Explain with example.

Or

(b) Design a VB project to find out the even and odd from any given input numbers.

12. (a) What is file? Give the difference between text file and random access file.

Or

(b) What are SDI and MDI? Explain in detail.

13. (a) What is the importance of common dialogue box in VB?

Or

(b) Explain about the Rich Textbox control and scroll bar with example.

14. (a) Discuss in detail about the SQL server data type.

Or

(b) Define ADO and explain ADO database.

15. (a) Explain object linking and object embedding with neat sketch.

Or

(b) Mention the advantages and disadvantages of OLE.

Part C (3 × 10 = 30)

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

16. (a) Describe the various types of errors in VB with neat example.

Or

(b) What is the utility of menus? What is Drop Down and Popup menu? Explain menu editor.

17. (a) Briefly discuss about the control array in VB with neat example.

Or

(b) Explain various iterative statements with suitable example.

18. (a) What is loop? Write the syntax of following loops :

(i) For……Next

(ii) Do while ……Loop

(iii) Do Loop……Until.

Or

(b) Briefly explain about how to create visual basic window form application.

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C–3522	Sub. Code
	96446

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fourth Semester

APPLIED PHYSICS - II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define insulator with example.
2. What is hall effect?
3. Draw a neat sketch of CB configuration.
4. What is NPN transistor?
5. Define meta stable states.
6. Give any 2 advantages of He-Ne laser.
7. Difference between LED and LCD.
8. Define photo diode.
9. Expand and explain CMRR.
10. Explain inverting operational amplifier.

Part B (5 × 5 = 25)

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

11. (a) Explain intrinsic semiconductor with an example.

Or

(b) Give the theory of energy bands in crystal system.

12. (a) Sketch the V-I characteristics of PNP transistor in CB configuration and explain in detail.

Or

(b) Give the difference between CB and CE configuration for NPN transistor.

13. (a) Describe the basic concept of stimulated emission.

Or

(b) Write a short notes on masers.

14. (a) What is a photo transistor? Explain the working of photo transistor.

Or

(b) Discuss the seven segment display and its operation.

15. (a) With a neat sketch explain R-2R ladder method.

Or

(b) Give the basic operation of an operational amplifier.

Part C (3 × 10 = 30)

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

16. (a) Briefly explain the principle, working and characteristics of zoner diode with the help of diagram.

Or

(b) List out the difference between intrinsic and extrinsic semiconductors.

17. (a) Explain the functions of transistor as an amplifier and an oscillator.

Or

(b) Discuss the principle and working of He-Ne laser.

18. (a) Explain in details.

(i) Photo conduction

(ii) Photo diode

(iii) Photo transistor.

Or

(b) Give the basic uses of operational amplifier as sign and scale changer phase shifter integrator.

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	96451

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fifth Semester

WEB TECHNOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name the tags used to display text in bold and italic.

2. Name the tags used to create rows and columns of a table.

3. Write java script code to get input from the user.

4. Write two dimensional array declaration in java script.

5. Write a while loop in java script to display numbers from 5 to 1 in descending order.

6. Write the syntax of switch case statement in java script.

7. Define the term user defined function.

8. Write any two methods of string object.

9. Write VB script code to declare one integer variable, one real variable and one string variable.

10. Write the options in msgbox of VB script.

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

Answer **all** questions by choosing either (a) or (b)

11. (a) Write FONT tag with all of its options and explain their output.

Or

(b) Write the general structure of an HTML page.

12. (a) Write java script code to get 5 names into an array and display them line by line.

Or

(b) Give examples for any five functions of math object.

13. (a) Write java script code to compute compound interest given the values of P,N and R using the formula P×N×R/100. Display input and computed values.

Or

(b) Write an user defined function in java script that accepts one number and returns its natures as ODD or EVEN.

14. (a) Explain the use of any 5 functions of array objects in java script.

Or

(b) Write short notes on the scope rules of functions and variables in java script.

15. (a) Explain different IF statement in VB script.

Or

(b) Write a VB script function that accepts a number and returns the square root of it.

Part C (3 × 10 = 30)

Answer **all** questions by choosing either (a) or (b)

16. (a) Explain the following tags in HTML:

<IMG>,<SUB><SUP> <A> and <FRAMESET>.

Or

(b) Write a java script program that accepts product names in array P, quantity purchased in array Q and unit price in array U. find the total price for each product by multiplying corresponding elements in Q and U arrays. Display all the values.

17. (a) Explain the use of operators and control structures in java script.

Or

(b) Explain in detail about the date object its properties and methods.

18. (a) Explain arrays and looping structures in VB script.

Or

(b) Write VB script code to input name and age of a person and find whether the person is major or minor.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fifth Semester

OPERATING SYSTEM

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name the layers of an operating system.

2. Compare fixed partition with dynamic partition in memory management.

3. What is interrupt?

4. Define the term starvation in deadlock handling.

5. Define the term process cooperation.

6. What is meant by process synchronization?

7. What are the responsibilities of file manager?

8. What are the levels in file management?

9. Write the shell command format at Unix operating system.

10. Write a note on user interface in Unix.

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

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

11. (a) Write about the single user contiguous scheme in memory management.

Or

(b) Write short notes on demand paging in memory management.

12. (a) Explain briefly about the strategic for handing deadlock.

Or

(b) Bring out the conditions for deadlock occurrence.

13. (a) Write short notes on parallel processing.

Or

(b) Explain briefly about device management.

14. (a) Brief on network operating system.

Or

(b) What are the levels of file management system? Explain briefly.

15. (a) Brief on the history of Unix operating system.

Or

(b) Explain briefly about file permissions in Unix operating system.

Part C (3 × 10 = 30)

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

16. (a) Explain in detail about memory partitioning strategies.

Or

(b) Explain in detail about deadlock prevention, detection and management.

17. (a) Explain in detail about process management functions of an operating system.

Or

(b) Describe different file access methods.

18. (a) Explain in detail how Unix operating system manages its devices.

Or

(b) Bring out the salient features of Unix operating system.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fifth Semester

SOFTWARE ENGINEERING

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What do you mean by the team “software engineering”?

2. Name any two productivity factors.

3. Name the teams in functional format of an organizational structure.

4. Name any two formal specification techniques.

5. Define the term “linspection”.

6. What is meant by “coding style”?

7. Define the term “ Debugging”.

8. List any two tools used for software maintenance.

9. List the types of verification.

10. What do you mean by "source code metric"?

Part B (5 × 5 = 25)

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

11. (a) Bring out the quality factors in software project.

Or

(b) Brief on the planning activities in developing a software solution.

12. (a) Brief on software cost factors.

Or

(b) Write short notes on software requirement specification.

13. (a) Give an account of software design notation.

Or

(b) Write short notes on "Test plan".

14. (a) Explain the strategic issues in software testing.

Or

(b) How to enhance maintainability during development? Explain briefly.

15. (a) Brief on "formal technical review".

Or

(b) What is statistical quality assurance? Explain briefly.

Part C (3 × 10 = 30)

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

16. (a) With necessity diagram, describe the COCOMO model.

Or

(b) Explain in detail about software cost estimation techniques.

17. (a) Explain the design of real time and distributed system.

Or

(b) Explain structural coding techniques in software implementation.

18. (a) Explain in detail about various testing methods.

Or

(b) Explain about SQA plan and ISO 9000 quality standards.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fifth Semester

MULTIMEDIA AND ITS APPLICATIONS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is meant by data stream?
2. Expand the term VRML and write a note on it.
3. List out the MIDI devices.
4. Name any two graphics formats.
5. What do you mean by the term Animation?
6. What is video signal?
7. Expand the terms JPEG and MPEG.
8. Differentiate between lossy and lossless compression.
9. Name any two sound editors.
10. What is Hyper media?

Part B (5 × 5 = 25)

Answer **all** questions by choosing either (a) or (b)

11. (a) Brief on asynchronous transmission mode.

Or

(b) Write short notes on the properties of multimedia system.

12. (a) Brief on sound formats.

Or

(b) Write short notes on speech analysis.

13. (a) Write short notes on High definition system.

Or

(b) Brief on computer based animation.

14. (a) Explain JPEG image format.

Or

(b) What is DVI audio? Explain briefly.

15. (a) Explain the features of anyone sound editor.

Or

(b) Explain the features of anyone text editor.

Part C (3 × 10 = 30)

Answer any **three** questions, by choosing either (a) or (b).

16. (a) Describe the characteristics of multimedia system.

Or

(b) Explain different data streams for multimedia.

17. (a) How digital images are represented and processed? Explain briefly.

Or

(b) Explain in detail about High definition systems.

18. (a) Explain anyone coding algorithm for image compression.

Or

(b) Explain anyone coding algorithm for video compression.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Fifth Semester

TRENDS IN COMPUTING

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name any two applications of grid computing.
2. Write short notes on resource sharing in data grid.
3. What are the components of cloud computing?
4. Define cloud computing.
5. Define SOA.
6. List out the some web service of cloud.
7. What is neural network?
8. Mention some applications of fuzzy logic.
9. Define genetic algorithm.
10. Define mutation.

Part B (5 × 5 = 25)

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

11. (a) Explain in detail about grid architecture.

Or

(b) Discuss the past and future grid computing technology.

12. (a) Explain the different cloud computing services and its concepts.

Or

(b) Discuss the data storage in cloud system.

13. (a) Discuss about SOA in cloud data services with example.

Or

(b) Explain in detail of web services in cloud data.

14. (a) Explain in detail about fuzzy logic theory.

Or

(b) Explain in detail about human brain and neural network.

15. (a) Discuss the comparison of operators in genetic algorithms.

Or

(b) State the difference between traditional algorithm and genetic algorithm.

Part C (3 × 10 = 30)

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

16. (a) Discuss briefly about computational and data grids.

Or

(b) Explain briefly about cloud security services and its applications.

17. (a) Explain the different fuzzy membership functions with neat diagram.

Or

(b) Explain in detail about supervised and unsupervised learning in soft computing.

18. (a) Discuss briefly about some research areas in Evolutionary algorithm.

Or

(b) Explain genetic algorithm in detail and its applications.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Sixth Semester

C# .NET PROGRAMMING

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the common language runtime (CLR)?
2. How write() method differ from the writeLine() method?
3. What is nesting of structure? Give an example.
4. What is constructor?
5. What is fallthrough in switch statement? Give an example.
6. Write about checked and unchecked operators?
7. What is the intermediate language?
8. Define the term plnvoker.
9. What is a delegate? What is it used for?
10. What are compile-time errors? Give an example.

Part B (5 × 5 = 25)

Answer **all** questions by choosing either (a) or (b)

11. (a) Describe the structure of typical C# program and mention C# is a free-form language.

Or

(b) Write about .NET framework with diagram.

12. (a) Write short notes on boxing and unboxing with example.

Or

(b) What is class nesting? Give an example.

13. (a) What are nested loops? Give an example.

Or

(b) Write a C# program to add all the odd numbers from 0 to 50. Use a simple IF and GOTO statement to form a loop of operations.

14. (a) List the advantages and disadvantages of unsafe mode.

Or

(b) What is namespace? Explain nested namespace.

15. (a) Explain in detail about console class with examples.

Or

(b) How a thread is created? How it is started?

Part C (3 × 10 = 30)

Answer **all** questions by choosing either (a) or (b)

16. (a) State the significant differences between C# and C++.

Or

(b) Explain in detail about compile-time and run-time errors.

17. (a) Explain the following

(i) Thread class

(ii) Monitor class

(iii) Mutex class

Or

(b) What is an event? Describe the syntax of an event declaration.

18. (a) What is an event handler? How it is designed?

Or

(b) Explain in detail about thread pooling with examples.

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	96462

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Sixth Semester

COMPUTER GRAPHICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define frame buffer.

2. What m and b denotes in an equation for the line?

3. What do you meant by display aspect ratio?

4. How polygon may be represented?

5. What are the entries of a segment table?

6. What is the use of segment visibility attribute of a segment table?

7. Define clipping.

8. What multiple window implies?

9. What do you mean by tracking cross?

10. List the classes of graphics hardware.

Part B (5 × 5 = 25)

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

11. (a) What is the distance between a point and a line in a plane?

Or

(b) How does the frame buffer array directly correspond to the screen?

12. (a) Describe in detail the set of graphic primitive commands.

Or

(b) How is an image of house produced using primitive commands?

13. (a) How the graphics system could be used to generate the background?

Or

(b) Write the algorithms for image transformations.

14. (a) Explain viewing transformations in detail.

Or

(b) How can clipping be added to the system?

15. (a) How to model for the processing of an input device interrupt?

Or

(b) Give a detailed account on event handling.

Part C (3 × 10 = 30)

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

16. (a) Discuss Brashanham's line algorithm in detail.

Or

(b) Explain various display devices shortly.

17. (a) Discuss deletion of a segment.

Or

(b) Write about the clipping of polygons in detail.

18. (a) Explain graphics hardware elaborately.

Or

(b) Explain in detail about interactive techniques.

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	96463

B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Sixth Semester

COMPUTER NETWORKS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Congestion.
2. What is ARPANET?
3. Define Hamming codes.
4. What is CRC?
5. What do you mean by Non Adaptive algorithm?
6. Define convergence.
7. What is transport entities?
8. Define sockets.
9. Expand SMTP.
10. What is caching?

Part B (5 × 5 = 25)

Answer **all** questions by choosing either (a) or (b)

11. (a) Differentiate connection oriented and connectionless services.

Or

(b) Write the uses of twisted pair? Explain.

12. (a) List out and explain the design issues of datalink layer.

Or

(b) Write a short note on ALOHA.

13. (a) Explain implementation of connection oriented services.

Or

(b) Give a short note on flooding.

14. (a) Write a note on crash recovery.

Or

(b) Explain TCP service Model.

15. (a) Give a short note about E-mail.

Or

(b) Explain Message formats.

Part C (3 × 10 = 30)

Answer **all** questions by choosing either (a) or (b)

16. (a) Explain network hardware in detail.

Or

(b) Write a brief note on elementary data link protocol.

17. (a) Describe shortest path routing algorithm in detail.

Or

(b) Discuss UDP in detail.

18. (a) Briefly explain about multimedia.

Or

(b) Write a brief note on uses of computer networks.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Sixth Semester

MOBILE COMMUNICATION

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define wireless transmission.
2. What is multiplexing modulation?
3. Expand MAC and UMTS.
4. What is TETRA?
5. What is WLAN?
6. Give any two services of WATM.
7. Mention fast retransmit.
8. Note on Indirect TCP.
9. What is WAP?
10. Give the note on HTTP.

Part B (5 × 5 = 25)

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

11. (a) Describe about signal propagation.

Or

(b) Explain about cellular system.

12. (a) Write a short note on S/T/F CDMA.

Or

(b) Discuss in detail about GSM.

13. (a) Write a short note on WATM.

Or

(b) Explain about mobile quality of services.

14. (a) Elaborate mobile IP.

Or

(b) Describe about ADHOC networks.

15. (a) What are the advantages of HTTP and explain?

Or

(b) Short note on HTML.

Part C (3 × 10 = 30)

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

16. (a) Explain in detail about Wireless transmission.

Or

(b) Discuss in detail about telecommunication system.

17. (a) Give a detailed note on HIPERLAN and bluetooth.

Or

(b) Discuss Access Point Control Protocol.

18. (a) Briefly describe note on mobile transport layer.

Or

(b) Explain about WWW.

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B.Sc. DEGREE EXAMINATION

COMPUTER SCIENCE

APRIL 2021 EXAMINATION

&

APRIL 2020 ARREAR EXAMINATION

Sixth Semester

DATA MINING AND DATA WAREHOUSING

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What do you meant by a data warehouse?

2. Define load manager.

3. Write a note on query manager.

4. What is capacity planning?

5. List out tow advantages of KDD.

6. Define Data mining.

7. Mention some advantages on DSS.

8. Write a note on neural networks.

9. Define association rule.

10. What is distributed algorithm?

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

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

11. (a) Discuss about data warehouse.

Or

(b) Explain about back up and archive process.

12. (a) Write a short note on data warehouse system manager.

Or

(b) Discuss in details about tuning the date load.

13. (a) Write a short not a date mining lssues.

Or

(b) Explain about data mining metrics.

14. (a) Write a detailed note on similarity measures.

Or

(b) Describe about decision tree.

15. (a) Discuss about parallel and distributed algorithm.

Or

(b) Write a short notes on measuring the quality of rule techniques.

Part C (3 × 10 = 30)

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

16. (a) Explain in detail data warehouse delivery process.

Or

(b) Discuss in detail about data warehouse process managers.

17. (a) Give a detailed note on data mining.

Or

(b) Discuss DSS and OLAP.

18. (a) Write a detailed note on any two data mining techniques.

Or

(b) Briefly explain advanced association rule techniques.

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