



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234
DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10CT22	Programme:	B Sc	CIA:	II
Date:	12.04.2021	Major:	Comp. Sci.	Semester:	II
Duration:	2 Hours	Year:	I	Max.Marks:	50
Course Title:	DATASTRUCTURE				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10 Marks)

- 1 Important part of any compiler is the construction and maintenances of a dictionary, this types of dictionary are called_____. CO3
a) symbol table b) index table c) grammar table d) pointer table.
- 2 In a directed tree any node which has out degree 0 is called a terminal node or _____. CO3
a) a tree b) a list c) a node d) a leaf.
- 3 _____ a tree means processing it in such a way that each node is visited only once CO3
a) Traversing b) Implement. c) Partition d) Node.
- 4 The length of the string can be listed as an additional item in _____. CO3
a) base pointer b) pointer array c) node d) record.
- 5 The_____ for a linked list is pointer variable that locates the beginning of the list. CO4
a) Anchor b) Base c) Footer d) Header
- 6 _____ operation is performed to add new element at the end of the list in a double linked list. CO4
a) Insertion b) Insert first c) Insert last d) Insert after
- 7 A tree is a data structure which represents hierarchical relationship between individual _____. CO4
a) data items. b) Fields c) nodes. d) linked list
- 8 _____ a tree means processing it in such a way that each node is visited only once. CO5
a) Traversing. b) Implement. c) Partition. d) Skipping.
- 9 Quick sort procedure was proposed and developed by _____ CO5
a) Hoare b) Sedgwick c) Mellroy d) Foreman
- 10 Which of the following is not a stable sorting algorithm? CO5
a) Insertion Sort b) Selection Sort c) Bubble Sort d) Merge Sort

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10 Marks)

- 11 Give the use of asymptomatic notation? CO3
- 12 Give the use of Top pointer in a stack? CO3
- 13 List the primary operations of a stack? CO3
- 14 Define Dequeue? CO4
- 15 Define a Leaf Node in a tree? CO4
- 16 List the types of tree traversal in binary search tree? CO4
- 17 Distinguish In-place sorting and Not-in-place sorting? CO5

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18 Marks)

- 18 Brief a note on Quick Sort with an example? CO3
- 19 Brief a note on the representation of linked list in the memory? CO3
- 20 Comment on search operation in a binary tree? CO4
- 21 Illustrate the sequential representation of binary trees in the Memory ? CO4
- 22 Explain Merge sort using a suitable C++ program CO5

SECTION – D (Applying)

Answer any **ONE** Question:

(1X 12= 12 Marks)

- 23 Describe the types of tree traversal in Binary Trees? CO4
- 24 Explain in detail representation of Stack and its various operations CO5

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DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10CT41	Programme:	B.Sc	CIA:	II
Date:	03.04.2021	Major:	Comp. Sci.	Semester:	IV
Duration:	2 Hours	Year:	II	Max.Marks:	50
Course Title:	RELATIONAL DATABASE MANAGEMENT SYSTEM				

SECTION – A (Remembering)

Answer **ALL** the Questions: (10 X 1 = 10 Marks)

- 1 The number of attributes in relation is called as its CO2
 A. Cardinality B. Degree C. Tuples D. Entity
- 2 In the _____ normal form, a composite attribute is converted to individual attributes. CO2
 A. First B. Second C. Third D. Fourth
- 3 In which of the following is a single-entity instance of one type related to many entity instances of another type? CO3
 A. One-to-One Relationship B. One-to-Many Relationship
 C. Many-to-Many Relationship D. Composite Relationship
- 4 Properties that describe the characteristics of entities are called: CO3
 A. Entities. B. Attributes. C. Identifiers. D. Relationships.
- 5 Which of the three possible types of triggers does SQL Server support? CO3
 A. INSTEAD OF only B. AFTER only
 C. BEFORE only D. INSTEAD OF and AFTER only
- 6 With which type of SQL Server recovery model, is no logging done? CO4
 A. Differential recovery B. Full recovery
 C. Bulk-logged recovery D. Simple recovery
- 7 The command to eliminate a table from a database is CO4
 A. REMOVE TABLE CUSTOMER B. DROP TABLE CUSTOMER
 C. DELETE TABLE CUSTOMER D. UPDATE TABLE CUSTOMER
- 8 _____ commands in SQL allow controlling access to data within database: CO5
 A. Database B. Data C. Data control D. All of these
- 9 Which product is returned in a join query have no join condition: CO5
 A. Equal joins B. Cartesian C. Both D. None
- 10 It refers to set of one or more columns that designates the _____ key in a referential integrity constraint: CO5
 A. Select key B. Foreign key C. Write key D. None of these

SECTION – B (Remembering)

Answer any **FIVE** Questions: (5 X 2 = 10 Marks)

- 11 Define key. CO2
- 12 Define Deadlock CO3
- 13 Define Normalization CO2
- 14 Write about Data types CO4
- 15 Define Data Dictionary CO2
- 16 Expand DDL, DML, DCL CO2
- 17 Define Trigger CO5

SECTION – C (Understanding)

Answer any **THREE** Questions: (3 X 6= 18 Marks)

- 18 Explain about Primary, Candidate, Unique Key CO2
- 19 Discuss about the DDL Language CO2
- 20 Explain about the DML Language CO2
- 21 Explain about Client Server System CO3
- 22 Discuss the Aggregate Function CO4

SECTION – D (Applying)

Answer any **ONE** Question: (1X 12= 12 Marks)

- 23 Illustrate the Database Administration Tools CO5
- 24 Write the DDL & DML query for to create a student mark list table CO2



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DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10CT42	Programme:	B.SC	CIA:	II
Date:	12.04.2021	Major:	Comp. Sci.	Semester:	IV
Duration:	2 Hours	Year:	II	Max.Marks:	50
Course Title:	DOT NET PROGRAMMING				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10 Marks)

- Which control is an example of an object in VB.NET? CO3
 A. Button. B. Label. C. Textbox. D. All of the above.
- Properties are used to represent _____. CO3
 A. actions. B. classes. C. data. D. events.
- _____Property is used to set the maximum length of a text, a textbox can hold. CO3
 A. Length B. Multiline C. MultiLength D. MaxLength
- Anything in VB.NET that has a property or method is _____. CO3
 A. a class. B. a control. C. an object. D. Both a and b.
- Which is a valid statement for declaring a variable? CO3
 A. Const Form As Integer B. ConstmyForm As Integer
 C. Dim Form As Integer D. Dim myForm As Integer
- The first event triggered in an .aspx page is _____. CO4
 A. Page_Init() B. Page_Load() C. Page_Render() D. Page_Click()
- File Extension for web controls in .NET Framework is _____. CO4
 A. .ascx B. .aswx C. .asmx D. .aspx
- The .NET Framework provides a run time environment called _____. CO4
 A. CLR B.RC C. RCT D. RTE
- Find the ODD One Out. CO4
 A. RequiredField Validator B. Regular Expression Validator
 C. Custom Validator D. Text Validator
- _____ is the folder that contains web applications in a web server. CO4
 A. Root Folder B. Web Folder C. Virtual Folder D. Program Folder

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10 Marks)

- Define ASP.Net? CO3
- Discuss about the any two important features of ASP.Net? CO3
- What is timer control? CO3
- Define VB.Net variable. CO3
- Different between label and link label. CO4
- Explain the Radio button with example. CO4
- What is text box with sample example? CO4

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18 Marks)

- Discuss about important properties for Rich text box. CO3
- Write a program in Fibonacci series using constructor and destructor. CO3
- Explain the dialog boxes in VB.NET. CO3
- Explain the List Box with example. CO4
- Discuss about the web server control. CO4

SECTION – D (Applying)

Answer any **ONE** Question:

(1X 12= 12 Marks)

- Explain about the validation server control with example. CO3
- Write a program in Employee details using Inheritance. CO4

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DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10CT61	Programme:	B.Sc.	CIA:	II
Date:	10.04.2021	Major:	Comp. Sci.	Semester:	VI
Duration:	2 Hours	Year:	III	Max.Marks:	50
Course Title:	WEB PROGRAMMING				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10 Marks)

- 1 What does PHP stand for? CO4
 i) Personal Home Page ii) Hypertext Preprocessor iii) Pretext Hypertext
 Processor iv) Preprocessor Home Page
 a)Both (i) and (ii) b)Both (ii) and (iv) c) Only (ii) d) Both (i) and (iii)
- 2 Who is the father of PHP? CO4
 a)Rasmus Lerdorf b) Willam Makepiece c)Drek Kolkevi d)List Barely
- 3 PHP files have a default file extension of. CO4
 a).html b).xml c).php d).ph
- 4 We can use ____ to comment a single line? CO4
 i) /? ii) // iii) # iv) /* */
 a)Only (ii) b)(i), (iii) and (iv) c)(ii), (iii) and (iv) d)Both (ii) and (iv)
- 5 . Which of following variables can be assigned a value to it? CO4
 (i) \$hello (ii) \$_hello (iii) \$this (iv) \$This
 a)All of the mentioned b) Only (ii) c) (ii), (iii) and (iv) d)(ii) and (iv)
- 6 Where is the correct place to insert a JavaScript? CO3
 a) The <head> section b)The <body> section
 c) The <title> section d) Both the <head> section and the <body> section are correct
- 7 A proper scripting language is a CO3
 a)High level programming language b)Assembly level programming language
 c)Machine level programming language d)Low level programming language
- 8 The statement a===b refers to CO3
 a) Both a and b are equal in value, type and reference address
 b) Both a and b are equal in value
 c) Both a and b are equal in value and type
 d) There is no such statement
- 9 Cookies were originally designed for CO3
 a)Client-side programming b)Server-side programming
 c) Both Client-side & Server-side programming d) None of the mentioned
- 10 The Cookie manipulation is done using which property? CO3
 a) cookie b)cookies c)manipulate d)none of the mentioned

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10 Marks)

- 11 What do you mean by Script? CO3
- 12 Define operator CO4
- 13 How to place a text in browser using javascript CO3
- 14 Write about DOM CO3
- 15 Differentiate client and server CO3
- 16 How to run a PHP program? CO4
- 17 What is the purpose of expires attribute in cookies? CO3

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18 Marks)

- | | | |
|----|---|-----|
| 18 | Explain functions in PHP with example | CO4 |
| 19 | Explain briefly about Textbox and submit button elements with example | CO3 |
| 20 | Discuss about cookies | CO3 |
| 21 | List out the advantages of PHP | CO4 |
| 22 | Write a PHP program to check username and password correct or not | CO4 |

SECTION – D (Applying)

Answer any **ONE** Question:

(1X 12= 12 Marks)

- | | | |
|----|--|-----|
| 23 | Discuss about datatypes in PHP | CO4 |
| 24 | Illustrate about Build-in function in PHP with example | CO4 |

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234**DEPARTMENT OF COMPUTER SCIENCE**

Course Code:	10EP2A	Programme:	B Sc	CIA:	II
Date:	12.04.2021	Major:	Comp. Sci.	Semester:	VI
Duration:	2 Hours	Year:	III	Max.Marks:	50
Course Title:	DATA MINING AND DATA WAREHOUSING				

SECTION – A (Remembering)Answer **ALL** the Questions:**(10 X 1 = 10 Marks)**

- 1 Concept description is the most basic form ____ mining **CO3**
a) Predictive b) Descriptive c) Comparative d) Discrimination d) multilevel association rule
- 2 Which one of these is used to visualize generalized data? ____ **CO3**
a) Count b) pie-charts c) Gantt Charts d) PERT charts
- 3 ____ contains a subset of corporate wide data that is of value to a specific group of users **CO3**
a) Enterprise Warehouse b) Data mart c) virtual ware house d) ROLAP
- 4 Which one of these is not a technique used in attribute-oriented induction approach? ____ **CO3**
a) Count & aggregate value accumulation b) attribute generalization c) data focusing
d) relevance analysis
- 5 If a rule concerns associations between the presence or absence of items is called a ____ **CO4**
a) Boolean association rule b) quantitative association rule c) dimensional association rule
- 6 ____ technique was progressed to partition database into blocks marked by start points **CO4**
a) Dynamic Itemset counting b) Sampling tree c) Partitioning D) Hash based
- 7 ____ methods are used by researchers in machine learning, expert systems, statistics & neurobiology **CO4**
a) Classification and prediction b) association rule c) clustering d) outlier analysis
- 8 ____ algorithm constructs decision tree using top-down recursive divide-and-conquer mechanism **CO5**
a) Apriori b) Greedy c) Dijkstra d) RSA
- 9 ____ is a neural network learning algorithm **CO5**
a) Back propagation b) Belief network c) fuzzy logic d) none of these
- 10 ____ is a set of connected input/output units where each connection has a weight associated with it. **CO5**
a) Neural Networks b) Rain forest c) Bayesian Networks d) belief networks

SECTION – B (Remembering)Answer any **FIVE** Questions:**(5 X 2 = 10 Marks)**

- 11 Give any two aggregate functions used to represent measures in a schema? **CO3**
- 12 List any two techniques to visualize generalized data in datamining? **CO3**
- 13 Distinguish Boolean Association rule and Quantitative Association rule? **CO3**
- 14 List any two types of Regression Models? **CO4**
- 15 List the types of Cluster Analysis? **CO4**
- 16 Distinguish nominal variable and ordinal variable in cluster analysis? **CO5**
- 17 Give any two applications of Datamining? **CO5**

SECTION – C (Understanding)Answer any **THREE** Questions:**(3 X 6= 18 Marks)**

- 18 Explain the Roll-up and Drill-down operations in OLAP with an example? **CO3**
- 19 Discuss about the issues on classification and prediction? **CO3**
- 20 Summarize a note on Tree Pruning? **CO4**
- 21 Classify the requirements for cluster analysis in datamining? **CO4**
- 22 Brief a note on social impacts of datamining? **CO5**

SECTION – D (Applying)Answer any **ONE** Question:**(1X 12= 12 Marks)**

- 23 Explain Cluster Analysis and its types ? **CO4**
- 24 Explain the trends in Datamining Applications ? **CO5**

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DEPARTMENT OF COMPUTER SCIENCE



Course Code:	10CT42	Major:	Non-Major	CIA:	II
Date:	08.04.2021			Semester:	IV
Duration:	2 Hours	Year:	I	Max.Marks:	50
Course Title:	WEB PROGRAMMING				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10 Marks)

- 1 tag indicates _____ CO1
(a) Bold (b) Font (c)Text (d) paragraph
- 2 <TR> tag used to represent _____ CO1
(a) Table row (b) table column (c)table width (d) none
- 3 Which one of the following is unordered list tag? CO2
(a) (b) (c) (d) <DL>
- 4 Which tag is used for adding image? CO2
(a) <a href> (b) (c) <Text> (d) <Frame>
- 5 Which tag is used for linking documents? CO3
(a) <Body> (b) <Head> (c) <a href> (d) <HTML>
- 6 An Xpath expression is specified using _____ CO3
A. curly braces. B. square braces. C. parenthesis. D. location node.
- 7 File Extension for web controls in .NET Framework is _____ CO4
Ever. _____ element creates a new checkbox in the form.
A. type='checkbox' B. type='chkbox'. C. type='check box'. D. type='chk box'.
- 8 _____ in a form causes changes to server data. CO4
A. Method = 'post'. B. Method = 'get'. C. Method = 'change'. D. Method = 'action'.
- 9 _____ is intended to define the content of the document. CO5
A. CSS. B. HTML. C. XML. D. DHTML
- 10 The action attribute in the _____ tag is the path to a script that processes the form data. CO5
A. type. B. form. C. text. D. select.

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10 Marks)

- 11 Briefly discuss about the structure of HTML CO1
- 12 Write a short note on <marquee>.? CO1
- 13 EXPAND HTML and HTTP? CO2
- 14 What is INTERNET? CO3
- 15 EXPAND WWW? CO3
- 16 E Write any two-browser name? CO4
- 17 Write a paragraph tag with an example? CO5

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18 Marks)

- 18 What is list? Explain with types? CO1
- 19 Discuss about unordered list with example program CO2
- 20 Explain about heading tags with suitable example program CO3
- 21 How to create a table? Explain with a simple program CO4
- 22 Briefly discuss about font tag with example. CO5

SECTION – D (Applying)

Answer any **ONE** Question:

(1X 12= 12 Marks)

- 23 How to create table using its various attributes? explain with an example program CO1
- 24 Write a HTML program to display your Bio-Data using form tag CO4

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DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10SB41	Programme:	B.Sc.	CIA:	II
Date:	02.04.2021	Major:	Comp. Sci.	Semester:	VI
Duration:	2 Hour	Year:	II	Max.Marks:	25
Course Title:	UNIX AND SHELL PROGRAMMING				

SECTION – A

Answer **ALL** the Questions:

(5 X 1 = 5 Marks)

- Q.No.** **CO**
- 1 Which of the following operator is used as a shorthand for test? **CO2**
a. % % b. [] c. && d. .
- 2 Which of the following option is used for checking if the file is readable or not? **CO2**
a. -e b. -f c. -n d. -z
- 3 _____ statement matches an expression for more than one alternative. **CO3**
a. for b. while c. elif d. case
- 4 Which command is used for computation and string handling? **CO3**
a. expr b. case c. if d. read
- 5 expr is a _____ command **CO3**
a. internal b. external c. shell d. derived

SECTION – B

Answer any **TWO** Questions:

(2 X 2 = 4 Marks)

- 6 Define Variable. **CO2**
- 7 What is the purpose of \$ in Shell scripting **CO3**
- 8 How to assign a value to a variable in shell script **CO2**
- 9 List out any two shell scripting language **CO3**

SECTION – C

Answer any **ONE** Questions:

(1 X 6 = 6 Marks)

- 10 Briefly discuss about advantages and disadvantages of shell script. **CO3**
- 11 Explain the procedure to write a scripting **CO3**

SECTION – D

Answer any **ONE** Question:

(1 X 10 = 10 Marks)

- 12 Discuss about if else structure in shell script with example **CO3**
- 13 Explain about for loop in shell script **CO4**



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234
DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10SB62	Programme:	B.SC.,	CIA:	II
Date:	02.04.2021	Major:	Comp. Sci.	Semester:	VI
Duration:	1 Hour	Year:	III	Max.Marks:	25
Course Title:	CYBER SECURITY				

SECTION – A

Answer **ALL** the Questions:

(5 X 1 = 5)

- 1 Which of the following Network Security protocols?
A) S/MIME B) SI/TLs C) IP Security D) All of these CO2
- 2 MAC Expand for _____ CO2
A) Message Authentication Code B) Message Authentication Character
C) Message Authorized Code D) Message Authorized character
- 3 Protocol refer to _____ CO2
A) Rules B) Methods C) Object D) Both A and B
- 4 TCP/IP is a _____ CO2
A) Network B) Software C) Hardware D) Protocol
- 5 E-Mail hacking can be done in any of the _____ CO2
A) Spam B) Attack C) Hack D) Malicious

SECTION – B

Answer any **TWO** Questions:

(2 X 2 = 4)

- 6 Define Foot Printing. CO2
- 7 Give a Classified the Password attacks. CO3
- 8 Expand: IRC and DNS. CO3
- 9 List out the types of Methods of virus Detection Methods. CO4

SECTION – C

Answer any **ONE** Question:

(1 X 6= 6)

- 10 Discuss about the Foot Printing and Stages. CO2
- 11 Give a Short Notes on Different types of Trojans. CO4

SECTION – D

Answer any **ONE** Question:

(1 X 10= 10)

- 12 Explain about the various types of Passwords. CO3
- 13 How a virus Spreads & Infects the Systems? CO4

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234
DEPARTMENT OF COMPUTER SCIENCE

Course Code:	10AT21	Programme:	B.Sc.,	CIA:	II
Date:	13.04.2021	Major:	Comp. Sci.	Semester:	II
Duration:	2 Hours	Year:	I	Max.Marks:	50
Course Title:	STATISTICS & PROBABILITY				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10)

- 1 _____ is the science of decision-making with calculated risks in the face of uncertainty. **CO3**
 A) Probability B) Outcome C) Event D) Trial
- 2 The union of two given sets A and B, denoted by _____. **CO3**
 A) $A \cup B$ B) $A \cap B$ C) $A \cap B'$ D) $A' \cup B'$
- 3 Which of the following is not possible in probability distribution? **CO4**
 A) $\sum P(x) = 0$ B) $\sum P(x) = 1$ C) $\sum P(x) = 2$ D) $\sum P(x) = -0.5$
- 4 Sample space denoted by _____. **CO4**
 A) α B) β C) S D) \$
- 5 Toss of a coin, find the total number of sample spaces _____. **CO4**
 A) 16 B) 8 C) 4 D) 2
- 6 Random variable denoted by _____. **CO4**
 A) x B) Variance C) X D) Variable
- 7 $A = \{1, 2, 3, 4, 5, 6\}$ and $B = \{2, 8, 10, 5\}$ then find A-B **CO5**
 A) 1, 3, 5, 6 B) 1, 2, 3, 4 C) 1, 3, 4, 6 D) 1, 2, 4, 6
- 8 Then student's t is defined by _____. **CO5**
 A) $t = \frac{x' - \mu}{s/\sqrt{n}}$ B) $T = \frac{x' - \mu}{s/\sqrt{n}}$ C) $t = \frac{x' - \mu}{s/\sqrt{N}}$ D) $t = \frac{x' - \mu'}{s/\sqrt{n}}$
- 9 When a card is drawn from a well shuffled deck of cards, what is the probability of getting a black king? **CO5**
 A) 2/26 B) 4/26 C) 2/52 D) 4/52
- 10 One card is selected at random from 50 cards numbered 1 to 50. What is the probability that the drawn card ends in digit 2 _____. **CO5**
 A) 1/10 B) 1/5 C) 3/10 D) None

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10)

- 11 What is Probability? **CO3**
- 12 Give a note on Venn Diagram. **CO3**
- 13 List out the types of Operations on Sets. **CO3**
- 14 Given data using Draw the Probability Chart and Prepare the Probability Table. **CO4**
 $P(3) = 1/8$; $P(2) = 3/8$;
 $P(1) = 3/8$; $P(0) = 1/8$
- 15 What do you Meant by Random Variable? **CO4**
- 16 Define Student's T distribution. **CO5**
- 17 Write down formula for the χ^2 . **CO5**

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18)

- 18 A factory has two machines are I and II. The Machines has Produce by 30% and 70% of items respectively. **CO3**
 Further 3% of items produced by Machine I are defective and 4% of items produced by Machine II are defective.
 An item is drawn at random. If the drawn item is defective find the probability that it was Produced by Machine II.

- 19 Prove that the geometric mean G of the distribution: CO4

$$dF = 6(2-x)(x-1)dx, 1 \leq x \leq 2.$$

Is given by $6 \log(16G) = 19$.

- 20 A random variable X has the following probability function: CO4

Value of X, x	0	1	2	3	4	5	6	7
$P(x)$	0	k	$2k$	$2k$	$3k$	k^2	$2k^2$	$7k^2+k$

(i) Find k (ii) Evaluate $P(X < 5)$

- 21 In one sample of 8 observations, the sum of the squares of deviations of the sample values from the sample mean was 84.4 and in the other sample of 10 observations it was 102.6. Test whether the difference is significant at 5% level. ($F_{0.05} = 3.29$ for (7, 9)). CO5
- 22 The theory predicts the proportion of beans in the 4 groups A, B, C and D should be 9:3:3:1. In an experiment among 1600 beans, the numbers in the 4 groups were 882, 313, 287 and 118. Does the experimental result support the theory? CO5

SECTION – D (Applying)

Answer any **ONE** Question:

(1X 12= 12)

- 23 A continuous random variable X has a p.d.f $f(x) = 3x^2, 0 \leq x \leq 1$. CO4
Find a and b such that (i) $P(X \leq a) = P(X > a)$, and (ii) $P(X > b) = 0.05$
- 24 The following figure show the distribution of digits in numbers chosen at random from a telephone directory: CO5

Digits	0	1	2	3	4	5	6	7	8	9	Total
Frequency	1026	1107	997	966	1075	933	1107	972	964	853	10000

Test whether the digits may be taken to occur equally frequency in the directory.





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Course Code:	10AT41	Programme:	B.Sc	CIA:	II
Date:	13.04.2021	Course:	Comp. Sci.	Semester:	IV
Duration:	2 Hours	Year:	II	Max.Marks:	50
Course Title:	NUMERICAL METHODS FOR COMPUTER SCIENCE				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10 Marks)

- 1 The Runge-kutta method of second order is nothing but ____ **CO4**
a)Euler Method. B)Taylor method c)Modified Euler method d)Improved Euler method
- 2 . _____ rule is applicable only when n is a multiple of 3. **CO4**
Weddle's b)Trapezoideal c) Simpson's 1/3 d) Simpson's 3/8
- 3 . _____ rule the number of intervals must be even. **CO4**
A. Weddle's b)Trapezoideal c) Simpson's 1/3 d) Simpson's 3/8
- 4 _____ is /are following central interpolation methods **CO4**
a) Guass forward b) Guass backward c) Laplace Everett d) all
- 5 Trapezoidal rule is derived from _____ formula. **CO4**
a)Newton's cotes b) Newton's forward interpolation c) Newton's backward interpolation d) Inverse Lagrange's
- 6 The degree of y(x) in Trapezoidal Rule is _____. **CO4**
a)1 b) 2 c) 3 d) 6
- 7 The _____ matrix in the normal equations is symmetric. **CO5**
a)Square. B) Scalar . c)Co-efficient. D)Upper triangular
- 8 In a ordinary differential equations the first category methods is _____ **CO5**
a)Taylor Method . b)Euler Method. C)Runge-Kutta Method. D)Pointwise Method.
- 9 A _____ of differential equations is a function which satisfies the differentialequations. **CO5**
a.)Solution. b.)General solution. c.)Particular solution. d.)Complete solution.
- 10 A _____ of differential equation is a solution got form the general solution by giving particular values to the arbitrary constant. **CO5**
a.)Solution. b.)General solution. c.)Particular solution. d.)Complete solution.

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10 Marks)

- 11 Write a formula of Newton's divided difference formula **CO3**
- 12 Define Lagrange's interpolation **CO3**
- 13 Write a formula of Romberg's method **CO4**
- 14 Integrate the following $\int_0^6 \frac{dx}{1+x^2}$ **CO4**
- 15 write a procedure to solve Simpson's one third rule **CO4**
- 16 Define central interpolation **CO3**
- 17 While $f(x_0, x_1)$ what is the result of divided difference? **CO3**

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18 Marks)

- 18 From the following table find f(x) and hence f(6) using Newton's interpolation **CO3**

X	1	2	7	8
F(x)	1	5	5	4

- 19 Form a divided differences table for the following data

CO3

X	-2	0	3	5	7	8
F(x)	-792	108	-72	48	-144	-252

- 20 Evaluate $\int_1^2 \frac{dx}{1+x^2}$ taking $h=0.2$ using Trapezoidal method.

CO4

- 21 Given $y' = x^2 - y$, $y(0) = 1$, find correct four decimal places value of $y(0.1)$ by improved Euler method

CO5

- 22 Given $y' = xy$, $y(0) = 1$ find $y(0.4)$ using Euler's method

CO5

SECTION – D (Applying)

Answer any ONE Question:

(1X 12= 12 Marks)

- 23 Evaluate the integral $I = \int_4^{5.2} \log ex \, dx$ with $h=1.2$ by Trapezoidal rule and Simpson's both rule

CO4

- 24 Using Lagrange's interpolation formula find $y(2)$, from the following table

CO3

X	0	1	3	4
Y	5	6	50	105

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Course Code:	10CT21	Programme:	B.Sc	CIA:	II
Date:	03.04.2021	Major:	Comp. Sci.	Semester:	II
Duration:	2 Hours	Year:	I	Max.Marks:	50
Course Title:	OBJECT ORIENTED PROGRAMMING WITH C++				

SECTION – A (Remembering)

Answer **ALL** the Questions:

(10 X 1 = 10 Marks)

- 1 Function overloading is also similar to which of the following? **CO2**
A. operator overloading B. constructor overloading
C. destructor overloading D. none of the mentioned
- 2 The technique of building new classes from existing classes is called _____. **CO4**
A. inheritance B. overloading C. constructor D. polymorphism
- 3 The class from which another class inherits the property is called _____ class. **CO4**
A. derived B. sub C. subordinate D. base
- 4 Base class is also called as _____. **CO4**
A. derived B. sub C. super D. subordinate
- 5 A _____ is a special method used to initialize the instance variable of a class. **CO3**
A. Member function B. Destructor C. Constructor D. Structure
- 6 A Class can have how many destructor? **CO3**
A. 1 B. 2 C. 3 D. 4
- 7 The parameter list in function overloading must differ by? **CO2**
A. Number of functions B. Function Size C. Function Name D. Number of argument
- 8 _____ is a default access specifier for members of class in C++. **CO4**
A. protected B. public C. private D. default
- 9 The class which derives the property from other is called as _____. **CO4**
A. super B. derived C. subordinate D. base
- 10 The other name for derived class is _____. **CO4**
A. subclass B. super class C. subordinate class D. base class

SECTION – B (Remembering)

Answer any **FIVE** Questions:

(5 X 2 = 10 Marks)

- | | | |
|----|------------------------------------|-----|
| 11 | Define Constructor? | C03 |
| 12 | Define Destructor. | C03 |
| 13 | List out the types of inheritance. | C04 |
| 14 | Define Polymorphism | C05 |
| 15 | What is Operator Overloading? | C04 |
| 16 | Define Inheritance | C04 |
| 17 | List out the types of Constructors | C03 |

SECTION – C (Understanding)

Answer any **THREE** Questions:

(3 X 6= 18 Marks)

- | | | |
|-----------|---|------------|
| 18 | Explain about the destructor with example | C03 |
| 19 | Discuss about Overloading binary operator | C04 |
| 20 | Explain about the Friendly function | C02 |
| 21 | Explain about Inheritance and its types | C04 |
| 22 | Write short notes on Copy constructor | C03 |

SECTION – D (Applying)

Answer any **ONE** Question:

(1X 12= 12 Marks)

- | | | |
|-----------|---|------------|
| 23 | Explain about single inheritance. Write a C++ program to create a student mark list using single inheritance. | C04 |
| 24 | Explain about parameterized constructor with example | C03 |