Study & Evaluation Scheme

Of

Bachelor of Science in Data Science
B.Sc. (Data Science)

[Effective from the academic year 2021-22]

DEPARTMENT OF COMPUTER SCIENCE

AWARUL ULOOM COLLEGE (AUTONOMOUS)
Address: 11-3-918, New Mallepally, Hyderabad, Telangana 500001 Phone: 040 2334 8242
Website: www.anwarululoom.in

B.Sc. (Data Science)

Semester I

CHOICE BASED CREDIT SYSTEM

Sr. No.	Paper Code	SUBJECTS	Classes			Evaluation Scheme			
			Th	Pr	Credits	l A	External Exam Min	Max	Total
01	47511	English	4	0	4	20	28	80	100
02	47512	Second Language	4	0	4	20	28	80	100
03	47513	Information Technology	6	0	4	20	28	80	100
04	47514	Mathematics - I	6	0	5	20	28	80	100
05	47515	Programming in C	4	0	4	20	28	80	100
06	47513P	IT-LAB	0	2	1	0	20	50	50
08	47515P	C-LAB	0	2	1	0	20	50	50
09	AECC-I	Environmental Studies	2	0	2	0	35	100	100
	Term 1 TOTAL		23	6	**25**	100	215	600	700

B.Sc. (Data Science) I year I Semester
Theory Paper/Paper Code: 47511
ENGLISH

Max Marks: 80 | No. of Credits: 04
Hrs/Week: 04 | No. of Hrs: 48

Unit I: (12Hrs)

Poetry

1. She -- Lakshmi Kannan
2. Songs Of The Ganga -- A.K. Mehrotra

Prose

1. Road Safety -- Source internet-WHO
2. Hard Work and Honesty or Good Bricks -- C. Rajagopalachari
3. Art and Literature – APJ Abdul Kalam

Unit II: (12Hrs)

Prose

1. The Annihilation of Caste –Dr B R Ambedkar
2. The Portrait of a Lady – Khushwant Singh
3. Refund – Fritz Karinthy(One Act Play)

Unit III: (12Hrs)

Grammar and Composition
Vocabulary: Synonyms, Antonyms, Idioms, Homonyms and Homophones
Composition: Paragraph Writing

Unit IV: (12Hrs)

Grammar and Composition
Grammar: Parts of Speech, Verbs, Tenses and Articles
Composition: Letter Writing

Text Book:

Skills In English - By E. Suresh Kumar, B. YadavaRaju, C. Murali Krishna

-000-

B.Sc. (Data Science) – I Year I Semester
Theory Paper/Paper Code: 47513
INFORMATION TECHNOLOGY

Max. Marks: 80 No. of Credits: 04
Total no. of Hrs: 48 Hrs/Week: 04

OBJECTIVE: To introduce the students with routine tools for office management and documentation on computer. Also to teach them the use of internet to enhance their creativity

UNIT - I (12 Hrs)

Introduction and definition of computer, functional components of a computer system (Input, CPU, Storage, Output Unit), types of memory and memory hierarchy, functioning inside a computer, classification of computers, Software – Introduction, types of software with examples, Introduction to languages, Compiler, Interpreter and Assembler. Essential Components of Computer, Hardware – Input Devices – Keyboard, Printing Devices, Scanner, Bar Code Reader, Output Devices – Monitor, Printers, Plotters

UNIT - II (12 Hrs)

Internet, Types of internet connections, Use of Internet to enhance knowledge, searching on internet, downloading/uploading contents from/to internet, creating e-mail account, etiquettes for communication with email.

Starting MS WORD 2013, Creating and formatting a document, Changing fonts style and size, Table Creation and operations, Autocorrect, Auto text, spell Check, Inserting objects, Page setup, Page Preview, Printing a document, Mail Merge.

UNIT - III (12 Hrs)

Starting MS – Excel 2013, Work sheet, cell inserting Data into Rows/ Columns, Alignment, Text wrapping , Sorting data, Auto Sum, Use of functions, referencing formula cells in other formulae, Naming cells, Generating graphs, Worksheet data and charts with Excel, Creating Hyperlink, Page set up, Print Preview, Printing Worksheets.

UNIT - IV (12 Hrs)

Features of Power Point 2013, Creating a presentation using auto content Wizard, Blank

Presentation, creating, saving and printing a presentation, Adding a slide to presentation, Navigating through a presentation, slide sorter, slide show, editing slides, Using Clipart, Word art gallery, Adding Transition and Animation effects, setting timings for slide show.

Suggested Readings:

1. Ron Mansfield, Working in Microsoft Office, TMH
2. Sinha P. K., Computer Fundamentals, BPB

Reference Books:

1. V. Rajaraman, Fundamentals of Computers, PHI
2. Peter Norton's, Introduction to Computers, TMH Page-1

Learning Outcomes:

1. Learn about the computers, parts of computers, development of computers.
2. Learn about the devices required for computers and knowledge of internet.
3. Work with the basic features of Ms-Word. Display documents using various views. Work effectively with features that affect the page layout of the document. Create and modify tabs and tables. Insert and work with clip art and pictures.
4. Learn Spreadsheets Cells and cell formatting, typing Formulas, Common Excel functions, Copying formulas, Absolute and relative referencing.
5. Learn about creating, editing, modifying presentations.

Note: Theory Exam (80 M) + Internal Assessment (20M) = 100Marks

-ooo-

B.Sc. (Data Science) – I Year I Semester
Theory Paper/Paper Code: 47514
Mathematics - I

Max. Marks: 80 | No. of Credits:04
Total no. of Hrs: 48 | Hrs/Week:04

Objective: The course is aimed at exposing the students to some basic notions in differential calculus.

Outcome: By the time students complete the course they realize wide ranging applications of the subject.

UNIT - I (12 Hrs)

Partial Differentiation: Introduction - Functions of two variables - Neighbourhood of a point (a, b) - Continuity of a Function of two variables, Continuity at a point - Limit of a Function of two variables - Partial Derivatives - Geometrical representation of a Function of two Variables - Homogeneous Functions.

UNIT - II (12 Hrs)

Theorem on Total Differentials - Composite Functions - Differentiation of Composite Functions, Implicit Functions - Equality of fxy(a, b) and fyz(a, b) - Taylor's theorem for a function of two Variables - Maxima and Minima of functions of two variables – Lagrange's Method of undetermined multipliers.

UNIT - III (12 Hrs)

Curvature and Evolutes: Introduction - Definition of Curvature - Radius of Curvature - Length of Arc as a Function, Derivative of arc - Radius of Curvature - Cartesian Equations - Newtonian Method - Centre of Curvature - Chord of Curvature.**Evolutes:** Evolutes and Involutes - Properties of the evolute.

UNIT - IV (12 Hrs)

Envelopes: One Parameter Family of Curves - Consider the family of straight lines - Definition - Determination of Envelope.

Volumes and Surfaces of Revolution: Introduction - Expression for the volume obtained by revolving about either axis - Expression for the volume obtained by revolving about any line - Area of the surface of the frustum of a cone - Expression for the surface of revolution - Pappus Theorems - Surface of revolution.

Text:

1. Shanti Narayan, P.K. Mittal Differential Calculus, S.CHAND, NEW DELHI
2. Shanti Narayan Integral Calculus, S.CHAND, NEW DELHI

Note: Theory Exam (80 M) + Internal Assessment (20M) = 100Marks

-000-

B.Sc.(Data Science) – I Year I Semester
Theory Paper/Paper Code: 47515
PROGRAMMING IN C

Max. Marks: 80 | No. of Credits: 04
Total no. of Hrs: 48 | Hrs/Week: 04

Objective: The aim of the subject is introduce Programming languages and a detail study of C programming language

Outcome: By the time the course complete student get acquainted with programming skills.

Unit I (12 Hrs)

Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation–precedence and associativity, Type Conversions.

Unit II: (12Hrs)

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences,
Control Statements: Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements–while, for, do-while; Special Control Statement–goto, break, continue, return, exit.
Array: One-dimensional Arrays, two-dimensional Array.

Unit III: (12Hrs)

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to function, Storage Classes, Inline Functions, and Recursion. String functions.
Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers andStrings, Pointers to Pointers, Array of Pointers, Pointer to Array.

Unit IV: (12Hrs)

User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union),Accessing members of a Structure (Union), Array of Structures (Union), Structures Vs Unions, EnumerationTypes.

Text book:

Computer Fundamentals and Programming in C (2e) By PradipDey, Manas Ghosh

Reference books:

1. Ivor Horton, Beginning C
2. Herbert Schildt, The Complete Reference C
3. Paul Deitel, Harvey Deitel, C How To Program

Note: Theory Exam (80 M) + Internal Assessment (20M) = 100Marks

-ooo-

B.Sc. (Data Science) – I Year I Semester
Practical/Paper Code: 47513P
INFORMATION TECHNOLOGY-LAB

Max. Marks: 50 No. of Credits: 01
Total no. of Hrs: 24 Hrs/Week: 02

Information Technology - (LAB)

1. Introduction to Windows, Note pad, Paint brush, Word Pad, calculator.
2. Introduction to Internet Web Browser, Search Engine, Creating E-Mail account, Attaching Documents, Sending and Receiving E-Mails, Bookmarks, favorites, internet configure.
3. Starting MS WORD 2007, Creating and formatting a document, Changing fonts style and size, Table
4. Creation and operations, Autocorrect, Auto text, spell Check, Inserting objects, Page setup, Page Preview, Printing a document, Mail Merge.
5. Starting MS – Excel 2007, Work sheet, cell inserting Data into Rows/ Columns, Alignment, Text wrapping, Sorting data, Auto Sum, Use of functions, referencing formula cells in other formulae, Naming cells, Generating graphs, Worksheet data and charts with Excel, Creating Hyperlink, Page setup, Print Preview, Printing Worksheets.
6. Starting MS – Power Point 2007, Creating a presentation using auto content Wizard, Blank Presentation, creating, saving and printing a presentation, Adding a slide to presentation,
7. Navigating through a presentation, slide sorter, slide show, editing slides, Using Clipart, Word art gallery, Adding Transition and Animation effects, setting timings for slide show.
8. Starting MS – Access 2007 – Creating tables, queries, forms, reports, pages, macro, module.

Learning Outcomes:

After the completion of course student will learn knowledge of computer hardware and software, use of internet, MS-office etc.

=000=

B.Sc.(Data Science) – I Year I Semester
Practical/Paper Code: 47515P
PROGRAMMING IN C (LAB)

Max. Marks: 50 | No. of Credits: 01
Total no. of Hrs: 24 | Hrs/Week: 02

---

1. Write a program to find the largest two (three) numbers using if and conditional operator.
2. Write a program to print the reverse of a given number.
3. Write a program to print the prime number from 2 to n where n is given by user.
4. Write a program to find the roots of a quadratic equation using switch statement.
5. Write a program to print a triangle of stars as follows (take number of lines from user):

```
*
* * *
* * * * *
* * * * * * *
* * * * * * * * *
```

6. Write a program to find largest and smallest elements in a given list of numbers.
7. Write a program to find the product of two matrices.
8. Write a program to find the GCD of two numbers using iteration and recursion.
9. Write a program to illustrate use of storage classes.
10. Write a program to demonstrate the call by value and the call by reference concepts.
11. Write a program that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments.
12. Write a program to illustrate use of data type enum.
13. Write a program to demonstrate use of string functions string.h header file.
14. Write a program that opens a file and counts the number of characters in a file.
15. Write a program to create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.
16. Write a program that opens an existing text file and copies it to a new text file with all lowercase letters changed to capital letters and all other characters unchanged.

Note:
1. Write the Pseudo Code / draw Flow Chart for the above programs.
2. Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows 10.

-ooo-

B.Sc. (Data Science) I Year I Semester
(AECC-I)(Theory Paper)
ENVIRONMENTAL STUDIES

Max. Marks: 100 No. of Credits: 2
Hrs/Week: 02 No. of Hours: 30

Unit I: Ecosystem, Biodiversity & Natural Resources (15Hrs)

1.Definition, scope & importance of environmental studies.
2.Structure of Ecosystem – Abiotic & Biotic components produces, consumers, decomposers, food chain, food webs Ecological pyramids.
3. Function of an Ecosystem: Energy flow in the Ecosystem (Single channel energy flow mode)
4. Definition of Biodiversity, Genetic, Species & Ecosystem diversity, Hot-spots of Biodiversity, Threats to Biodiversity, conversation of Biodiversity (Insitu&Exsitu)
5.Renewable & Non – renewable resources, Brief account of Forest, Mineral & Energy (Solar Energy & Geothermal Energy) resources.
6. Water Conservation, Rain water harvesting & Watershed management.

Unit II: Environmental Pollution, Global Issues & Legislation (15Hrs)

1. Causes, Effects & Control measures of Air Pollution, Water Pollution
2. Solid Waste Management
3. global Warming & Ozone layer depletion
4. III – effects of Fire-works
5. Disaster management – floods, earthquakes & cyclones
6. Environmental legislation
a) Wild life Protection Act b) Forest Act c) Water Act (d) Air Act
7. Human Rights
8. Women and Child welfare
9. Role of Information technology in environment and human health

Fields Study: (05 Hours)

. Pond Ecosystem
. Forest Ecosystem

Reference Books:

. Environmental Studies – from crisis to cure – by R. Rajagopalan (Third edition) Oxford University Press
. Text book of Environmental Studies for undergraduate courses (Second Edition) by ErachBharucha
. A text book of Environmental Studies by Dr. D. K. Asthana and Dr. MeeraAsthana

-000-

B.Sc. (Data Science)

Semester II

CHOICE BASED CREDIT SYSTEM

Sr. No.	Paper Code	SUBJECTS	Classes			Evaluation Scheme			
			Th	Pr	Credits	I A	External Exam Min	Max	Total
01	47521	English-II	4	0	4	20	28	80	100
02	47522	Second Language	4	0	4	20	28	80	100
03	47523	Python - I	6	0	4	20	28	80	100
04	47524	Basic Discrete Mathematics	6	0	5	20	28	80	100
05	47525	Office Automation Tools	4	0	4	20	28	80	100
06	47523P	Python-I Lab	0	2	1	0	20	50	50
08	47525P	Office Automation Lab	0	2	1	0	20	50	50
09	AECC-II	Basic Computer Skills	2	0	2	0	35	100	100
	Term 1 TOTAL		23	6	**25**	100	215	600	700

B.Sc. (Data Science) – I Year II Semester
Theory Paper/Paper Code: 47521
ENGLISH

Max. Marks: 80 | No. of Credits:0 4
Total no. of Hrs: 48 | Hrs/Week: 04

Unit -1(12 hrs)
Poetry
Kalahandi -- Jagannath Prasad Das
The Night of the Scorpion – NissimEzekeil

Unit -2(12 hrs)
Prose
The Cut –off – ChetanBhagat
The Need for Excellence – N.R .Narayana Murthy
Let's Go Home -- KewlianSio

Unit -3(12 hrs)
MeghnadSaha – Enakshi Chatterjee
A Journey with My Father – Rabindranath Tagore
Matsyaganddhi – M. Sajitha (One Act Play)

Unit -4(12 hrs)
Grammar and Composition
Grammar:
Active and Passive Voice, One-Word substitutes, Question Tags
Composition:
Descriptive Writing (Things and Place)
Grammar and Composition
Grammer:
Commonly confused words, Prepositions, Prefixes and Suffixes
Composition:
Letter Writing

Reference Book:
Skills In English - By E. Suresh Kumar, B. YadavaRaju, C. Murali Krishna

-000-

B.Sc. (Data Science) – I Year II Semester
Theory Paper/Paper Code: 47522
PYTHON-I

Max. Marks: 80 | No. of Credits:0 4
Total no. of Hrs: 48 | Hrs/Week: 04

Course Objectives/Course Description

- To understand the basic concepts of Python
- Learn Basic Programming features
- To develop ability to start write code for various problems
- Ability implement Data Visualization Techniques

UNIT-I: (12Hrs)

Introduction to Python: Python, Features of Python, Execution of a Python Program, Viewing the Byte Code, Flavors of Python, Python Virtual Machine, Comparisons between C and Python, Comparisons between Java and Python.

Writing Our First Python Program: Installing Python for Windows, Setting the Path to Python, Writing Our First Python Program, Executing a Python Program,

UNIT-II: (12Hrs)

Data types in Python: Comments in Python, Doc strings, How Python Sees Variables, Data types in Python, Built-in data types, bool Data type, Sequences in Python, Sets, Literals in Python, Determining the Data type of a Variable, What about Characters, User-defined Data types, Constants in Python, Identifiers and Reserved words, Naming Conventions in Python.

UNIT-III: (12Hrs)

Operators in Python: Arithmetic Operators, Assignment Operators, Unary Minus Operator, Relational Operators, Logical Operators, Boolean Operators, Bitwise Operators, Membership Operators, Identity Operators, Operator Precedence and Associativity, Mathematical Functions.

Input and Output: Output statements, Input Statements, Command Line arguments.

UNIT-IV: (12Hrs)

Control Statements: Control Statements, The if Statement, A Word on Indentation, The if … else Statement, The if … elif … else Statement, The while Loop, The for Loop, Infinite Loops, Nested Loops, The else Suite, The break Statement, The continue Statement, The pass Statement, The assert Statement, The return Statement.

Text Book: R. Nageswara Rao, Core Python Programming, Dreamtech Press

References:

Mark Lutz, Learning Python
Tony Gaddis, Starting Out With Python
Kenneth A. Lambert, Fundamentals of Python
James Payne, Beginning Python using Python 2.6 and Python 3
Paul Gries, Practical Programming: An Introduction to Computer Science using Python 3

Learning Outcome

- CO1:Explore the fundamental concepts of Python Programming
- CO2:Understand data analysis techniques for applications handling small data

Note: Theory Exam (80 M) + Internal Assessment (20M) = 100Marks

-ooo-

B.Sc. (Data Science) – I Year II Semester
Theory Paper/Paper Code: 47523
BASIC DISCRETE MATHEMATICS

Max. Marks: 80 | No. of Credits:0 4
Total no. of Hrs: 48 | Hrs/Week: 04

Course Objectives/Course Description

This course aims at introducing the students into the world of Discrete Mathematics. It includes the topic like Set Theory, Functions and Relations. They gain a historical perspective of the development of modern discrete mathematics and application of the same in the field of Computer Science.

Unit I (12 Hrs)
Logic:
Propositional Logic, Applications of Propositional Logic, Propositional Equivalences, Predicates and Quantifiers, Nested Quantifiers, Rules of Inference, Introduction to Proofs, Proof Methods and Strategy

Unit II (12 Hrs)
Sets & Matrices:
Sets, Set Operations, Functions, Sequences and Summations, Cardinality of Sets, Matrices

Unit III (12 Hrs)
Counting:
The Basics of Counting Exercises, The Pigeonhole Principle, Permutations and Combinations, Binomial Coefficients and Identities, Generalized Permutations and Combinations, Generating Permutations and Combinations

Unit IV (12 Hrs)
Relations and Their Properties: Relation and their Properties, n-ary Relations and Their Applications, Representing Relations Exercises, Closures of Relations, Equivalence Relations, Partial Orderings

TEXT BOOKS

K. H. Rosen, Discrete Mathematics and its Applications, 7th ed., McGraw – Hill, 2012.

REFERENCE BOOKS:

- R.P. Grimaldi and B.V. Ramana, Discrete and Combinatorial Mathematics, An applied introduction, 5th ed., Pearson Education, 2007.
- D. S. Chandrasekharaiah, Discrete Mathematical Structures, 4th ed., India: PRISM Book Pvt. Ltd., 2012
- J. P. Tremblay and R. Manohar, Discrete Mathematical Structures with Application to Computer Science, Reprint, India: Tata McGraw Hill Education, 2008.

Learning Outcome

- Demonstrate a working knowledge of set notation and elementary set theory, recognize the connection between set operations and logic
- Prove elementary results involving sets
- Apply the different properties of injections, surjections, bijections, compositions, and inverse functions
- Demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relations
- Determine when a relation is reflexive, symmetric, antisymmetric, or transitive, apply the properties of equivalence relations and partial orderings, and explain the connection between equivalence relations

Note: Theory Exam (80 M) + Internal Assessment (20M) = 100Marks

-ooo-

B.Sc. (Data Science) – I Year II Semester
Theory Paper/Paper Code: 47525
OFFICE AUTOMATION TOOLS

Max. Marks: 80 No. of Credits:0 4
Total no. of Hrs: 48 Hrs/Week: 04

Course Objectives: The purpose of this course is to teach students to identify word processing and the skills you'll need to successfully use Excel.

Unit I (12Hrs)

Computer & Internet: Desktop computers, Block diagram of a computer, Input and output devices, memory and storage devices, different ports and its uses, Different type of printers.

Software: OS, Windows OS, Application software. Networking, different LAN and WAN connections, connecting to a network, testing connection, Internet, IP address, Hypertext, Uniform Resource Locator, Web Browsers, IP Address, Domain Name, Internet Services Providers, Internet Security, Internet Requirements, Web Search Engine, Internet Services.

Unit II (12Hrs)

Windows XP: Windows concepts, Features, Windows Structure, Desktop, Taskbar, Start Menu, My Computer, Recycle Bin, Windows Accessories-Calculator, Notepad, Paint, Wordpad, Character Map, Windows Explorer, Entertainment, Managing Hardware & Software Installation of Hardware & Software, Using Scanner, System Tools, Communication, Sharing Information between programs.

Unit III (12Hrs)

Word Processing: MS-Word Features, Creating, Saving and Opening Documents in Word, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut, Editing, Previewing, Printing,& Formatting a Document, Advanced Features of MS Word, Find & Replace, Using Thesaurus, Using Auto- Multiple Functions, Mail Merge, Handling Graphics, Tables & Charts, Converting a word document into various formats like- Text, Rich Text format, Word perfect, HTML,PDF etc.

Unit IV (12Hrs)

Worksheet- MS-Excel: Worksheet basics, creating worksheet, entering into worksheet, heading information, data, text, dates, alphanumeric values, saving & quitting worksheet, Opening and moving around in an existing worksheet, Toolbars and Menus, Keyboard shortcuts, Working with single and multiple workbook, working with formulae & cell referencing, Auto sum, Coping formulae, Absolute & relative addressing, Worksheet with ranges, formatting of worksheet, Previewing & Printing worksheet, Graphs and charts, Database, Creating and Using macros.

Reference Books:

- Professional Office Procedure by Susan H Cooperman, Printice Hall
- Information Technology:Principles , Practices and Oppertunities by James A Senn, Printice Hall
- Technology And Procedures for Administrative Professionals by Patsy Fulton-Calkins, Thomson
- Learning Public Information Technology and E-Governance: Managing the Virtual State (Paperback) by G. David Garson

Learning Outcome

- Ability to Animate and Design the document.
- Simplification of Mathematical expressions.
- Create Format cells, rows, columns, and entire worksheets.
- Create charts and diagrams for data.
- Create data lists and forms.
- Create and use pivot tables and pivot charts.
- Work with VBA concept.

Note: Theory Exam (80 M) + Internal Assessment (20M) = 100Marks

-ooo-

B.Sc.(Data Science) – I Year II Semester
Practical/Paper Code: 47523P
PYTHON-I LAB

Max. Marks: 50 | No. of Credits: 01
Total no. of Hrs: 24 | Hrs/Week: 02

I. Exercise programs on basic control structures & loops.

1) Write a program for checking the given number is even or odd.
2) Using a for loop, write a program that prints the decimal equivalents of 1/2, 1/3, 1/4 ,……. 1/10
3) Write a program for displaying reversal of a number.
4) Write a program for finding biggest number among 3 numbers.
5) Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.

II. Exercise programs on operators & I/O operations.

1) Write a program that takes 2 numbers as command line arguments and prints its sum.
2) Implement python script to show the usage of various operators available in python language.
3) Implement python script to read person's age from keyboard and display whether he is eligible for voting or not.
4) Implement python script to check the given year is leap year or not.

III. Exercise programs on Python Script.

1) Implement Python Script to generate first N natural numbers.
2) Implement Python Script to check given number is palindrome or not.
3) Implement Python script to print factorial of a number.
4) Implement Python Script to print sum of N natural numbers.
5) Implement Python Script to check given number is Armstrong or not.
6) Implement Python Script to generate prime numbers series up to n

IV. Exercise programs on Lists.

1) Finding the sum and average of given numbers using lists.
2) To display elements of list in reverse order.
3) Finding the minimum and maximum elements in the lists.

V. Exercise programs on Strings.

1) Implement Python Script to perform various operations on string using string libraries.
2) Implement Python Script to check given string is palindrome or not.
3) Implement python script to accept line of text and find the number of characters, number of vowels and number of blank spaces in it.

VI. Exercise programs on functions.

1) Define a function max_of_three() that takes three numbers as arguments and returns the largest of them.
2) Write a program which makes use of function to display all such numbers which
3) are divisible by 7 but are not a multiple of 5, between 1000 and 2000.

-000-

B.Sc.(Data Science) – I Year II Semester
Practical/Paper Code: 47525P
OFFICE AUTOMATION TOOLS -LAB

Max. Marks: 50 No. of Credits: 01
Total no. of Hrs: 24 Hrs/Week: 02

MS-WORD

1. Create and Design Admission/Enquiry Forms in Microsoft Word.
2. Create a mail to 'n' number of contacts from label and send mail to 'n' number of contacts selected from label using mail merge.
3. Prepare a document about any topic in mathematics which uses mathematical symbols. At least 5 mathematical symbols should be used.

Assign a password for the document to protect it from unauthorized access. Demonstrate the use of Hyperlink Option.

Write a macro that sets margins to your document, a font of size and double spaced document.

4. Create and Design Seminar/Conference/Workshop brochure.

MS-EXCEL

M S – Excel:

1. Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers Vice Versa.
Decimal Numbers: 35, 68, 95, 165, 225, 355, 375, 465
Binary Numbers: 101, 1101, 111011, 10001, 110011001, 111011111

2. The A C B Company shows the sales of different products for 5 years. Create column Chart, 3 D – Column and Bar Chart for the following Data.

YEAR	PRODUCT-1	PRODUCT-2	PRODUCT-3	PRODUCT-4
2003	1000	800	900	1000
2004	800	80	500	900
2005	1200	190	400	1000
2006	400	200	300	1000
2007	1800	400	400	1200

3. Create a suitable examination data base and find the sum of the marks (total) of each student and represent class secured by the student
Rules:
Pass if marks in each subject >=35
Distinction if average >=75

First Class if average >=60 but < 75
Second Class if average >=50 but < 60
Third Class if average >=35 but < 50
Fail if marks in any subject is< 35
Display average marks of the class, subject wise and pass percentage

4. Calculate Total, Average and Result of the following:

ROLL NO	NAME	MARKS S1	S2	S3	TOTAL AVERAGE	RESULT
1	A	80	90	100		
2	B	60	70	20		
3	C	90	80	10		

a. For Pass, every subject should be 40 or above marks
b. For Fail, any one subject be Less than 40 4.

5. Create the following table and calculate Incentive:

EMP ID	NAME	SALES(Rs)	INCENTIVE
101	A	10000	
102	B	20000	
103	C	10000	

Policy:
Sales between 10000-15000=5%
>15000-<20000=6%
>=20000-<30000=8%

6. Using Built-in Excel Template, prepare Personal Monthly Budget.

7. Using Built-in Excel Template, prepare Billing Statement/Invoice

-ooo-

QUESTION PAPER PATTERN FOR B.Sc. (DATA SCIENCE)

Class & Sem.	**I year I Sem.**
Subject	**ENGLISH-I**
Annual/BL	**Regular**
Time	**3 Hours**
Max/Min	**Marks 80/28**

Date	**10-10-2021**
Time	**8:30 to 10:30PM**
Code No.	**47511**
Course	**B.Sc. Data Science**
Roll No.	**1062-21-475-501**

Section- A

Short Questions

I Answer any four (4) of the following all questions in 50 words 5X4= 20 Marks

Unit-1

Unit-2

Unit-3

Unit-4

Choose from any of the above unit

Section- B

Essay Questions

II Answer all the questions in 150 words 4X15= 60 Marks

1. Unit-1
   Or
   Unit-1
2. Unit-2
   Or
   Unit-2
3. Unit-3
   Or
   Unit-3
4. Unit-4
   Or
   Unit-4