

Monthwise Syllabus Distribution Session 2022-23

Smt.Chhaya Makhijani

Class :M.Sc. (CS) I SEM

Paper/Subject : II Programming Skills with C++

Month: August 2022

Unit I : OOPS :Introduction to oops principles, procedure oriented programming vs. object oriented programming, advantages of OOPs, applications, examples of object oriented languages. Introduction to C++: tokens, expressions, keywords, identifiers, basic data types, user defined data types, derived data types, symbolic constants, type compatibility, variable declaration, dynamic initialization of variables, reference variables. Operators in C++: scope resolution operator, memory management operators, manipulators, type cast operators, operator precedence. Control structures. Arrays: single, multidimensional, array of strings. Functions: function prototyping, function call, scope rules of functions, call by value, call by reference, calling functions with arrays.

Month : September 2022

Unit II : Classes and Objects : specifying a class, defining member function, private member functions, scope resolution operator, memory allocation for objects, static data members, static member functions, arrays of objects, objects as function arguments, returning objects, Inline functions, friend functions. Pointers: pointer variables, operators and expressions, initializing pointers, array of pointers, this pointer. C++ dynamic memory allocation operator. Constructors: definition, types: default, copy, parameterized, multiple, constructors with default arguments, Destructors.

Unit III Overloading: definition, rules of overloading, function overloading, Operator overloading and its restrictions, overloading unary and binary operators, operator overloading using a friend function.

Month: October 2022

Unit IV: Inheritance: derived class and base class, defining derived classes, types of inheritance- single, multiple, multilevel, hierarchical, hybrid inheritance. Making a private member inheritable, passing parameter to the base class, constructors and destructors in derived classes, nesting of classes. Virtual Base class, abstract classes. Template, Template Classes, Explicit Class, Exception handling. Exception Handling Fundamentals, The try Block, the catch Exception Handler, The throw Statements.

Month: November 2022

Unit V Managing console I/O operations: C++ streams, stream classes, unformatted and formatted i/o operations, managing output with manipulators. Working with files: classes for file stream operations. opening and closing files, detecting end of file, sequential i/o operations, command line argument.

Month: December 2022

Revision

Class : BCA II Year Subject : Computer Application Course Type : Major II
Course Title : Database Management Systems Using PL/SQL

Month : July 2022

Unit I : Introduction to DBMS:

Why database? Characteristics of data in database, DBMS. What are database advantages of DBMS?

Database Architecture and Modelling: Conceptual, physical and logical database models, Role of DBA, Database design.**Entity Relationship (ER) Model**: Components of ER-model, ER modelling symbols, Relationships.

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Month : August 2022

Unit I: Enhanced Entity Relationship (EER) Model: An Introduction, Superclass and subclass entity types, Specialization, Generalization, Attribute inheritance, Categorization & Aggregation.

Keywords: DBMS, DBA, Entity Relationship (ER), EER, Superclass, Subclass, Specialization.

Month : September 2022

Unit III : Relational database implementation:

(a) Relational Algebra and Calculus

Relational Algebra: Union, Intersection, Difference, Product, Select, Project, Join-Natural, Theta & Outer Join, Divide, Assignment.

Relational Calculus: Target list & Qualifying Statement, The Existential Quantifier, The Universal Quantifier.

Keywords: JOIN, Target list, Existential Quantifier, Universal Quantifier.

Month: October 2022

Unit II : The Relational Data Model:

Fundamental Concepts: Relations, Null Values, Keys, Foreign Keys, Integrity Constraints – Entity Integrity & Relational Integrity.

Month : November 2022

Unit II : Normalization Process: First Normal Form, Functional Dependencies, Second Normal Form, Third Normal Form, Boyce-Codd Normal Form (BCNF), Fourth Normal Form;

Month : December 2022

Unit II

Other Normal Forms – Fifth Normal Form & Domain/Key Normal Form.

Month : January 2023

Revision Unit I

Month: February 2023

Revision II

Month : March 2023

Revision Unit III

Class : BCA III YEAR Subject : Python Programming Paper : IV

Month: July 2022

UNIT I

Python Basics : Python interpreter, Python idle, dynamically typed and strongly typed features, basic data types, variables, expressions, statements, operators, flow of execution. Input and Output statements. Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else). Iteration: while, for, break, continue, pass, Implementing 'for' through range (), 'in' and 'not in' operators for sequence traversal. Creating and executing .py scripts.

Month: August 2022

UNIT II

Data Structures: Lists- append, extend, insert, index, remove, pop, count, sort, reverse, slicing, list comprehension, Copying a list: deep copy, shallow copy. Tuples- index, count, usage, use of tuples as a swap function. Dictionaries-keys, values, tuples, nested dictionaries, dictionary comprehension. Strings- Single line and multi-line strings, formatter, isdigit, isalpha, isalnum, islower.

Month: September 2022

UNIT II :

Istitle, isspace, title, lower, upper, strip, split, splitlines, join etc. Sets – union, intersection, subset, superset, difference, symmetric difference, copy, add, remove, discard etc.

UNIT III

Functions & File Handling: Inbuilt Functions- id, len, chr, ord etc., defining and calling a function, arguments, global versus local variables, defining and using lambda functions, the map(), filter(), reduce() functions.

Month : October 2022

UNIT III

. Working with files : read, write and append modes: r, w, a, r+, w+, a+, reading-read(), readline(), readlines(), writing-write(), writelines(), seek(), tell(). Word count, copy file scripts through file handling concepts.

Month : November 2022

UNIT IV

Classes, modules and exceptional handling: Classes: Introduction, Member variables and defining methods, constructor, destructor, data encapsulation, inheritance, multiple inheritance, diamond problem solving technique of python. Modules: inbuilt modules- sys, random, time etc. import, from..import, from..import *. Constructing packages, role of __init__.py

Month : December 2022

UNIT IV

.Exceptional Handling: The **try-except-else-finally** block, the **raise** statement, the hierarchy of exceptions, adding exceptions.

Unit V

Database & GUI Programming: importing sqlite, connecting to database, creating table, insert, select, update, delete, drop tables, accessing and modifying tables through python.

Month : January 2023

Unit V Graphical user interfaces; event-driven programming paradigm; tkinter module, creating simple GUI; buttons, labels, entry fields, dialogs; widget attributes - sizes, fonts, colors layouts, nested frames.

Month: February 2023 Revision

Month: March 2023 Revision

Class : BSc II YEAR

Course Title : Object Oriented Programming with Java

Course Type : Major II /Minor/Elective

Month: July 2022

Module I : OOPS- Object Oriented Paradigm, Benefits of OOP, Applications of OOP,

Java - History, Java Features, How Java differs from C and C++ ,Java and internet ,Java and World Wide Web ,Web Browser, Hardware and Software Requirements , Java Supports Systems, Java Environment.

Month: August 2022

Module I:

Java Program Structure - Java Tokens, Java Statements, Implementing a Java Program ,Java Virtual Machine, Command Line Arguments and Programming Style.

Keywords: OOPS, JVC, WWW, Java Environment.

Module II : Java Basics - Constants, Variables, Data Types, Declaration of Variables, Giving Values to Variables, Scope of Variable, Symbolic Constants, Type Casting, Getting Values of Variables, Standard Default Values.**Operators** - Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and decrement Operators, Conditional Operators, Bitwise Operators, Special Operators.

Month: September 2022

Module II :

Arithmetic Expressions - Evaluation of Expressions, Precedence of Arithmetic Operators, Type Conversions in Expressions, Operator precedence and Associativity, Mathematical Functions. **Decision Making** with if Statement, Simple if statement ,if.....else statement, Nesting of if ...else statement , if-else Ladder, The Switch Statement, The ? Operator.

Loops - While Statement, Do Statement, For Statement, Jump in Loops, Labeled Loops.

Keywords: Operators, Arithmetic Expressions, Decision Making, Loops.

Month : October 2022

Module III : Class - Defining a Class, Adding Variables, Adding Methods ,Creating Objects, Accessing Class Members.

Constructors - definition and types, Methods Overloading, Static Members, Nesting of Methods.

Month: November 2022

Module III :

Inheritance - Extending a class, Overloading Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract Methods and Classes, Visibility Control Arrays, One Dimensional Array, Strings, Vectors, Wrapper Classes. Defining Interfaces, Extending Interfaces, Implementing Interfaces. Accessing Interface Variables.

Keywords: Class, Constructors, Inheritance, Final , Abstract Methods, Overloading.

Month: December 2022

Module IV :

Java API Packages - Using System Packages, Naming Conventions, Creating Packages, accessing a Package, Adding a Class to a Package, and Hiding Classes. Creating Threads, Extending the Thread Class, Stopping and Blocking a Threads, Life Cycle of a Thread, Using Threads Methods, Threads Exceptions, Threads Priority, Synchronization, Implementing the 'Runnable' interface.**Types of Errors** - Exceptions, Syntax of Exception Handling Code, Multiple Catch Statements, Using Finally Statements, Throwing Our Own Exceptions, Using Exceptions for Debugging.



Month: January 2023

Module IV :

Preparing to Write Applets - Building Applet Code, Applet Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet.

Keywords: API, threads, synchronization, errors, Applets, debugging.

Month: February 2023

Module V :

More About the Applet tag - Passing Parameters to Applets, Aligning the Display, More About HTML Tags, Displaying Numbering Values, Getting Input from the user. **The Graphics Class** - Lines and Rectangles, Circles and Ellipses, Drawing Arcs, Drawing Polygons, Line Graphs, Using Control Loops in Applets, Drawing Bar Charts.

Month: March 2023

Module V :

Concept of Stream - Stream Classes, Byte Stream Classes, Character Stream Classes, Using Streams, **Other Useful I/O Classes** - Using the File Class, Input / Output Exceptions, Creation of Files, Reading / Writing Characters, Reading / Writing Bytes, Handling Primitive Data Types, Concatenating and Buffering Files, Random Access, Files, Interactive Input and Output, other Stream Classes.

Keywords: Stream, files, Graphics class, buffering, HTML tags.

Month: April 2023

Revision

Class : UG I YEAR (B.Com I Year)

Course Type : Elective

Course Title : M.S Office

Month: August 2022

Unit I :

MS. Word: Introduction, Feature & area of use. Working with MS Word: Ribbon tabs-Homes, Insert , Page Layout, Reference, Mailings, Review and View, Using word to create a new document, open, Save and print a document, edit and format text, change the page layout background and borders, insert headers and footers, insert and edit tables, insert clip art and pictures to documents. Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors.

Month: September 2022

Unit I :

Inserting Header and Footer, Using Data and Time option in Word. Creating project abstract Features to be Covered: - Formatting Styles, Inserting Table, Bullets and Numbering Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track, Changes.

Unit II:

Creating a Newsletter: Features to be Covered: - Table of Content, Newspaper columns, Image from files and clipart, drawing toolbar and Word Art, Formatting Images, Textboxes and Paragraphs. Creating a Feedback form- Features to be covered – Forms, Text Fields Inserting Objects. **Mail Merge:** Creating Custom document, Creating main document. Crating data source, editing data source, Opening a data source. sorting the data source. finding a record in data sources. editing main document sorting merged



documents, filtering merged documents, printing merged documents, Merging onto) letterhead, using different data sources with a single main document.

Month : October 2022

Unit III:

MS EXCEL : Introduction to excel interface understanding rows and columns, Naming cells, Working with excel workbook and sheets Formatting excel work book, New, Open, Close, Save, Save As Formatting Text: Font size Font Style, Font Color, Use the Bold, Italic, and Underline Wrap text, Merge and Centre Currency, Accounting and other formats, Modifying Columns Rows & Cells, Perform Calculations with Functions, Creating Simple Formulas Setting up your own formula.

Month: November 2022

Unit III:

Date and Time Functions, Financial Functions Logical Functions, Lookup and Reference, Functions. **Calculations**-Features to be covered : Cell Referencing, Formulae in excel- average, Standard deviation, Charts, Renaming and Inserting worksheets, Hyper Linking, Count function, Mathematical Functions, Statistical Functions, Text Functions. Sort and Filter Data with Excel Sort and Filtering data Using number filter, Text filter, Custom filtering Removing filters from columns, Conditional formatting.

Month: December 2022

Unit IV:

Create Effective charts to Present Data Visually inserting Column, Pie chart etc. Create an effective chart with Chart Tool, Design, Format, and Layout options, Adding chart title, Changing layouts, Chart Styles, Editing chart data rang Editing data series, Protecting and Sharing the work book Protecting a workbook with a password.

Month: January 2023

Unit IV:

Allow user to edit ranges, Track changes, Working with Comments. Insert Excel Objects and Charts in Word, Use Macros to Automate Tasks creating and Recording Macros, Assigning Macros to the work sheets, Saving Macro enabled workbook. **Performance Analysis** – Features to be Covered: Split Cells, freeze panes, group and outline, Sorting Boolean and logical Operators, Conditional formatting Cricket Score Card creation – Features to be covered:- Pivot Tables Interactive Buttons, Importing Data, Data Protection Data Validation.

Month: February 2023

Unit V:

Creating PowerPoint Presentations: Making Presentation which demonstrate use of Hyperlinks, Inserting –Images Clip Art, Audio Video, Objects Table and Charts. Create Master Layouts (Slide Template, and notes), Types of View (basic, Presentation, Slide Slotter, notes etc.) Inserting – Background, textures, Design Templates, Hiddent slide, Auto Content Wizard, Slide Transition, Custom Animation, Auto Rehearsing.

Month: March 2023

Revision



Month: January 2023

Unit I

Data Representation: Introduction, Linear List, Formula Based Representation, Linked representation. Indirect Addressing, Simulating Pointers.

Arrays and Matrices: The abstract data type, Operations: traversing, insertion, deletion, searching(linear & binary search) and their algorithms, row major & column major representation. Matrices: definition and operations, Special Matrices, Sparse Matrices.

Unit II

Stacks: The Abstract Data Type, PUSH & POP operations, Array representation, Linked Representation. Applications: Post fix expression evaluation and its algorithm, transforming infix expressions into postfix expressions, its algorithm, parenthesis matching, Tower of Hanoi, Re-arranging railroad cars, Rat in a maze problem.

Month: February 2023

Unit II

Queues: The Abstract Data Type, array representation, Linked Representation, Insertion and deletion algorithms, Applications, circular queue, Dequeue.

Unit III

Binary and other Trees: Trees, Binary Trees, Properties, Representation, Common Binary Tree Operation. Binary Tree Traversal, The ADT Binary Tree.

Month: March 2023

Unit IV

Linked Lists: representation in memory, traversing, searching, insertion, deletion operations and their algorithms, doubly linked lists, header linked list.

Graphs: Definitions, Applications, Properties, The ADT Graph. Representation of unweighted graphs: adjacency matrix, linked adjacency lists, array adjacency list, representation of weighted graphs, Graph

Search Methods: depth first search and breadth first search and their algorithms.

Month: April 2023

Unit III

Binary Search tree, abstract data type, searching, inserting and deleting in binary search trees their algorithms, AVL Trees, Introduction to Red-Black Tree and B-Tree,

Tournament Trees: Introduction, Winner Tree, The ADT Winner Tree, Loser Tree Applications.

Priority Queues: Introduction, Linear List, Applications.

Heaps: Definition, max heap initialization, insertion/ deletion in a max heap, Applications: Heap sort, machine scheduling, Huffman codes.

Unit V

The Greedy Method: Optimization Problems, The method, Applications.

Divide and Conquer: The Method, Applications: merge sort, quick sort and selection sort.

Dynamic Programming: The Method, Applications.

Month: May 2023

Revision

Sri Sathya Sai (Autonomous) College for Women, Bhopal

Under Graduate Syllabus Distribution
Recommended by Central Board of Studies
Syllabus distribution- Botany (2022-2023)
Teacher Name- Dr. Renu Mishra

Class : B.Sc I Year
Paper : Minor paper
Subject : Botany
Title of Subject Group : Basic Botany

Max. Marks : 70 CCE : 30

Month	Syllabus to be covered
July 2022	Microbes: Brief outline of various types of Microbes.
August 2022	Archaeobacteria, Eubacteria, Cyanobacteria.
September 2022	Mycoplasma, Actinomycetes. Virus: Beneficial and Harmful roles Algae : general characteristics
October 2022	Algae- range of thallus organization, reproduction, types of life cycle in algae , Role of algae in nature and its economic importance)
November 2022	Fungi: General Characteristics and cell wall composition, Mode of nutrition, Types of reproduction, Economic importance
December 2023	Parasexuality and Mycorrhiza, Lichen: Brief Knowledge and their significance. Pteridophytes: General characteristics and morphology.
January 2023	Stelar organization and reproduction, Heterospory and seed habit, Economic importance
February 2023	Gymnosperms: General characteristics and their distribution, Economic importance of Gymnosperms
March 2023	Revisions



Dr. Renu Mishra
HOD,
Dept. of Botany and Microbiology

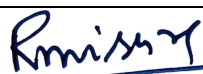
Sri Sathya Sai (Autonomous) College for Women, Bhopal

Under Graduate Syllabus Distribution
Recommended by Central Board of Studies
Syllabus distribution- Botany (2022-2023)
Teacher Name- Dr. Renu Mishra

Class : B.Sc I Year
Paper : Major paper
Subject : Botany
Title of Subject Group : Applied Botany

Max. Marks : 70 CCE : 30

Month	Syllabus to be covered
July 2022	Syllabus distribution, Introduction, Objectives and importance of Applied Botany
August 2022	History and evolution of botany, Relation of plants to man and relation with other services
September 2022	Ancient agricultural practices, Modern agricultural practices: Polyhouse, Drip irrigation, hydroponics, computer-based agriculture, terrace farming.
October 2022	Organic farming: Introduction, objective and brief technique, Horticulture: Definition, branches and role in human welfare, Forestry: Definition, branches and role in human welfare
November 2022	Silviculture: Definition and management practices, Role of Botany in Rural development 1.2 Ethnobotany: Introduction and importance
December 2022	Ethnomedicine: Definition and examples. (Local name, Botanical name, family and importance of Neem, Aloe, Clove, Ginger, Tulsi, Termeric, Giloy, Emblica, Ashwagandha, Arandi) 1.4
January 2023	Ethno-food crops: Definition and examples (Local name, Botanical name, family and importance of Garadu, Singada, Kutaki, Sama, Kodo, Bathua, Sehjan, Jowar, Makka, Bajra, Jau)
February 2023	Ethno-Fibers: Definition and examples (Local name, Botanical name, family and importance of Ankara, Coconut, elephant grass, cotton)
March 2023	Revisions



Dr. Renu Mishra
HOD,
Dept. of Botany and Microbiology

Sri Sathya Sai (Autonomous) College for Women, Bhopal

Under Graduate Syllabus Distribution

Recommended by Central Board of Studies

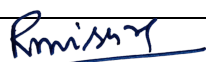
Syllabus distribution- VOCATIONAL COURSE- Medicinal Plants (2022-2023)

Teacher Name- Dr. Renu Mishra

Class : B.Sc I Year
Paper : Vocational COurse
Subject : Medicinal Plants
Title of Subject Group : Medicinal Plants

Max. Marks : 70 CCE : 30

Month	Syllabus to be covered
July 2022	Syllabus distribution
August 2022	Important Indian Medicinal Plants (Part-01) 1.1 Plant parts used as Powder: Identification and utilization of Amla (<i>Embellica officinalis</i>), Bahera (<i>Terminalia bellerica</i>), Harad (<i>Terminalia chebulla</i>). Turmeric (<i>Curcuma longa</i>), Garlic (<i>Allium sativum</i>), Bitter guard (<i>Momordica charantia</i>),
September 2022	Black plum (<i>Syzygium cumini</i>), Fenugreek (<i>Trigonella foenum- graecum</i>), Cinnamon (<i>Cinnamomum verum</i>), Sarpagandha (<i>Raulfia serpentina</i>), Black pepper (<i>Piper nigrum</i>), Ashwagandha (<i>Withania somnifera</i>), Psyllium
October 2022	Plant parts used as juice/decoction: Identification and utilization of Amla (<i>Embellica officinalis</i>), Ginger (<i>Zingiber officinale</i>), Onion (<i>Allium cepa</i>), Bottle gourd (<i>Lagenaria siceraria</i>), Basil (<i>Oscimum sanctum</i>), Arjun (<i>Terminalia arjuna</i>), Neem (<i>Azadirachta indica</i>). Gwarpatha (<i>Aloe vera</i>).
November 2022	Brahmi (<i>Bacopa monnieri</i>), Giloy (<i>Tinospora cordifolia</i>). Shankpushpi (<i>Convolvulus prostrate</i>), Bael (<i>Aegle marmelos</i>)
December 2023	Plant parts used as lotion/ointment: Identification and utilization of Gwarpatha (<i>Aloe vera</i>), Fenugreek (<i>Trigonella foenum-graecum</i>), Pot marigold (<i>Calendula officinalis</i>), Neem (<i>Azadirachta indica</i>).
January 2023	Plant parts used as oil: Clove (<i>Syzygium aromaticum</i>), Neem (<i>Azadirachta indica</i>), Coconut (<i>Coccus nucifera</i>), Nilgiri (<i>Eucalyptus sp.</i>). 1.3 Plant parts used as surgical fibre, sutures and dressings: Identification and utilization of Cotton (<i>Gossypium sp.</i>). Jute (<i>Corchorus capsularis</i>), Banana (<i>Musa sp.</i>),
February 2023	1.4 Plant parts used as poultice: Identification and utilization of Turmeric (<i>Curcuma longa</i>), Nilgiri (<i>Eucalyptus sp.</i>), Ginger (<i>Zingiber officinale</i>), Garlic (<i>Allium sativum</i>), Onion (<i>Allium cepa</i>), Dhatura (<i>Datura sp.</i>), Aak (<i>Calotropis sp.</i>), Arandi (<i>Ricinus communis</i>),
March 2023	Revisions



Dr. Renu Mishra

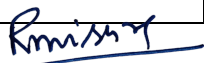
HOD,

Dept. of Botany and Microbiology

Sri Sathya Sai (Autonomous) College for Women, Bhopal
Under Graduate Syllabus Distribution
Recommended by Central Board of Studies
Syllabus distribution- Botany (2022-2023)
Teacher Name- Dr. Renu Mishra

Class : **B.Sc II Year**
Paper : **First and Second Paper**
Subject : **Botany**
Title of Subject Group : **MAJOR-Plant anatomy and Embryology.**
MINOR- Industrial Botany
Max. Marks : **70** **CCE** : **30**

Month	Syllabus to be covered
July 2022	MAJOR- Special types of tissues MINOR- Timber yielding plants
August 2022	MAJOR- structure of dicot and monocot root, stem MINOR- timber yielding trees of India and their products (Shisham, Sal, Teak, Deodar, Babool)
September 2022	MAJOR- leaf kranz anatomy Secondary growth. Vascular cambium: structure, function and seasonal activity. MINOR- Bamboo and Cane industry
October 2022	MAJOR- Secondary growth in root and stem. Wood(heartwood and sapwood) MINOR- Kattha Industry, Flower based Industries.
November 2022	MAJOR- Anomalous structures, Adaptive and protective systems: Epidermis, cuticle and stomata. General account of adaptations in xerophytes and hydrophytes MINOR- Perfume products of gulab, jasmine, Henna. Color Industry (Food and Holi colors)
December 2022	MAJOR- Dendrochronology, Embryology: History and importance, Structure of flower, anther and pollen MINOR- Raw material for fermentation (Mahua)
January 2023	MAJOR- Microsporogenesis and megasporogenesis, structure and types of ovules, types of embryo sac, Organisation and ultrastructure of mature embryo sac MINOR- Fruits and seed based industries, jams, jellies, juice, pickles, sauce, Poha and Dal industry
February 2023	MAJOR- Embryo and endosperms relationship, Nutrition of embryo, Unusal features in embryo and endosperms MINOR- Edible oil Industry (Groundnut, Soyabean), starch , glucose
March 2023	MAJOR- <i>in-vitro</i> Fertilization , Revisions MINOR- Dextrose industry. Industrial visit, Revisions



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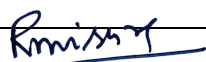
Recommended by Central Board of Studies

Syllabus distribution- VOCATIONAL COURSE- Medicinal Plants (2022-2023)

Teacher Name- Dr. Renu Mishra

Class	:	B.Sc II Year		
Paper	:	Vocational COurse		
Subject	:	Medicinal Plants		
Title of Subject Group	:	Medicinal Plants		
Max. Marks	:	70	CCE :	30

Month	Syllabus to be covered
July 2022	Syllabus distribution
August 2022	General Aspects of Ayurvedic System, lants used in Ayurvedic System of Treatment: Local and scientific name, family and identification of Bacopa monnieri (Brahmi), Boerhavia diffusa (Punarnava), Butea monosperma (Palash)
September 2022	Datura sp., Piper nigrum (Black pepper), Ricinus communis (Arandi), Withania sominifera (Ashwagandha), Terminalia arjuna (Arjun)
October 2022	Identification and uses of plants in Allopathic Medicines: Local and name, family and identification of Calendula officinalis (Calendula, Marigold), Lavendula angustifolia (Lavender, Violets), Salvia rosmarinus (Rosemary), Syzygium aromaticum (Clove), camphora (Camphor tree). Carum carvi (Ajwain)
November 2022	dentification and uses of plants in Homoeopathic Medicines: Local and Scientific name, family and identification of Andrographis peniculata (Green chiretta,kalmegha), Thuja occidentalis (Morpankhi),
December 2023	Achyranthus aspara (Apamarga), Convolvulus prostatus (Shankhpushpi), Mangifera Indica (Mango), Lycopodium sp, Selaginella sp.
January 2023	Folk medicines used in different diseases: Santalum album (Chandan), Oryza sativa (Rice), Euphorbia hirta (Asthma weed), Bauhinia variegate (Kachnar), Bamboosa (Bamboo)
February 2023	Mythological Ethnomedicines: Ficus sps (Bargad, Pepal), Acacia sp (Babool), Aegel marmelos (Bel), Ocimum sanctum (Holy basil); Cosmetic Ethnomedicines: Curcuma longa (Turmeric), Vitex negundo (Nirgundi), Cicer arietinum (Chick pea, Gram), Sesamum indicum (Sesame)
March 2023	Revisions



Dr. Renu Mishra

HOD,

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Sri Sathya Sai (Autonomous) College for Women, Bhopal
Under Graduate Syllabus Distribution
Recommended by Central Board of Studies
Syllabus distribution- Botany (2022-2023)
Teacher Name- Dr. Renu Mishra

Class : **B.Sc III Year**
Paper : **Major and Minor**
Subject : **Botany**
Title of Subject Group : **Cell biology, Genetics and Biotechnology**
Max. Marks : **70** **CCE** : **30**

Month	Syllabus to be covered
July 2022	<p>Major Paper 1 Syllabus discussion Major Paper 2 syllabus discussion Minor Paper- syllabus discussion, ethnobotany, introduction, concept and scope, objectives</p>
August 2022	<p>Major Paper 1 Physiology and its significance Major Paper 2 definition, branches and importances, interrelationships between life and environment Minor Paper- ethnobotany as an interdisciplinary science, various branches of ethnobotany</p>
September 2022	<p>Major Paper 1 Lipid metabolism structure and synthesis. fatty acid biosynthesis, beta oxidation, saturated and unsaturated fatty acids, storage and mobilization of fatty acids. Enzymology Classification, nomenclature and characteristics of enzymes, concepts of holoenzymes, apoenzymes, co enzymes and cofactors Major Paper 2 synecology: Community types, analytical and synthetic characters of a community, succession : Types and process, population ecology: Characters, dynamics, and ecological speciation. Minor Paper- relevance of ethnobotany in the present context, major and minor ethnic groups of tribals of india and their lifestyles.</p>
October 2022	<p>Major Paper 1 regulation of enzymes activity, mechanism of action, factors affecting enzyme activity. Plant hormones-Discovery. Major Paper 2 ecotone, ecads, ecotypes, ecospecies and edge effects. Ecological factors: soil importance, composition, soil texture. Water- distribution, precipitation, hydrological cycle,</p>

	<p>light- types of radiation, variations, adaptation, temperature, variation and adaptations in the plants.</p> <p>Minor Paper- plants used by tribal- fod plants,, intoxicants and beverages, resins and oils and miscellaneus</p>
November 2022	<p>Major Paper 1 Plant hormones- strcture, mode of action and physiological role of Auxins, Gibberlins, Cytokinins, Abscissic acid and ethylene</p> <p>Major Paper 2 Fire- variation and adaptation in the plant biotic factors. Ecosystem- structure and function, trophic level, food chains, food web</p> <p>Minor Paper- plans in mythology, taboos and totems in relation to plants, folklore and folktales, wildlife protection in tribals, plants in similes and metaphors.</p>
December 2022	<p>Major Paper 1 Growth and development- General knowledge of vegetative and reproductive growth, phases of growth and development.</p> <p>Major Paper 2 Energy flow- concept and models</p> <p>Minor Paper- medico ethnobotanical Sources IN Inida- significance of the following plants in ethnobotanical practices Azadiracta indica, ocimum sanchtum, vitex negundo. Gloriosa superba, Tinospora cordifolia, Butea monosperma. Cassia fistula</p>
January 2023	<p>Major Paper 1 Kinestics of growth, Seed dormancy, seed dormancy, Seed germination and factors of their regulations</p> <p>Major Paper 2 productivity- definition and types, Biotic interaction- autotraophy, heterotrohy, symbiosis.</p> <p>Minor Paper Study of common plants in skin diseases, bronchial inflammation, asthma, jaundice, malaria,</p>
February 2023	<p>Major Paper 1 Concepts of photoperiodism and physiology of flowering. Florigen concept, Biological clocks,</p> <p>Major Paper 2 commensalism, protocoperaton, parasitism, amensalism, Predation. Ecological phyramids</p> <p>Minor Paper- expulsion of worms, jaundice, piles, rheumatism, heart diseases, amoebic dysentery, leukoderma.</p>
March 2023	<p>Major Paper 1- phytochromosomes, crytpochromosomes their discovery, physiological and mechanisms of action.</p> <p>Major Paper 2 -Revision</p> <p>Minor Paper -REVISION</p>


Dr. Renu Mishra

HOD, Dept. of Botany and Microbiology

Dr. Neena Arora
HOD - Chemistry
Syllabus Distribution Session 2022-23

Month	Syllabus
July, 2022	<p>B.Sc. II - Unit I- Knowledge Traditions of Indian Chemistry- Ancient Indian Chemists & their works: Nagarjuna, Vagbhata, Govindacharya, Yashodhara, Ramchandra, Somdev etc.</p> <p>Introductory idea about rasas: Main Rasa, Maha rasa, Uparas, common rasa, Ratna, Dhatu, Poison, alkali, acid, salt lauhabhasma.</p> <p>B.Sc. III - Unit I- .Hard and Soft Acids and Bases(HSAB) Introduction: Classification of hard and soft acid-base, Hard and Soft acids base concept of Pearson,</p>
August, 2022	<p>B.Sc. II - Unit I- Maharas: Abram, Vaikrant, Bhasik, Vimala, Shilajatu, Sasak, Chapala, Rasak. Upras: Gandhak, Garik, Kashis, Suvari, Lalak, Manah, Shila, Anjana, Kanakushtha. Common Rasa: Koyla, Gauripashan, Navasara, Varataka, Agnijar, Lajavarta, Giri Sinoor, Hingul, Murdad Shrangakam.</p> <p>Chemistry of d- & f- block elements :Chemistry of Transition elements: First, Second & Third Transition Series. General group trends with special reference to Electronic configuration, Co- ordination Geometry, Color, Variable valence, spectral Magnetic & Catalytic properties. Ability to form complexes.</p> <p>B.Sc. III - Unit I- Application of hard-soft acid base theory, Symbiosis, acid-base strength and hardness and softness. Theoretical basis of hardness and softness, electronic theory, π-bonding theory, and Drago-wayland theory electronegativity and hardness and softness, limitations of hard soft acid –base concept.</p>
September, 2022	<p>B.Sc. II - Unit I: Chemistry of Inner Transition elements: Lanthanides and Actinides, General group trend with special reference to Electronic configuration, Oxidation states, colour, spectral and Magnetic properties. Lanthanide contraction. Separation of Lanthanides (Ion -exchange method only) Transuranic elements: General Introduction</p>

	<p>B.Sc. III - Unit I: Silicones and Phosphazenes Introduction: Silicones- methods of preparation, classification, properties and application (uses). Phosphazenes (Phosphonitrilic chloride)- Methods of preparation and properties: Structure of triphosphazenes. Some other phosphazenes and uses of phosphazenes.</p>
October, 2022	<p>B.Sc. II - Unit I- Structure, Stereochemistry & Metal Ligand Bonding in transition Metal Complexes: Werner's theory for complexes: Electronic interpretation by Sidgwick.</p> <p>valence bond theory(VBT): Postulates & application for Tetrahedral, Square planar & Octahedral complexes, Limitation of VBT.</p> <p>B.Sc. III - Unit II- Metal Ligand Bonding in Transition Metal Complexes. Introduction: Limitation of valence bond theory, crystal field theory, crystal field splitting of d-orbitals, d-orbital splitting and stabilisation energy in octahedral, tetrahedral and square planar complexes.</p>
November, 2022	<p>B.Sc. II - Unit II- Crystal Field Theory(CFT): Postulates & applications. Crystal field splitting of d-orbitals, crystal field stabilisation energy (CFSE) in tetrahedral square planar & octahedral complexes,</p> <p>B.Sc. III - Unit II- factors affecting the crystal field parameters. Applications of crystal field theory and limitations of crystal field theory.</p> <p>Thermodynamic and Kinetic Aspects of Metal Complexes. Introduction: Thermodynamic aspects of metal complexes, factors affecting thermodynamic stability of complexes.</p>
December, 2022	<p>B.Sc. II - Unit II- Tetragonal distortion from octahedral geometry, limitations of CFT. Qualitative aspect of ligand field & Molecular Orbital (MO) Theory. Spectrochemical & Nephelauctic series. Co-ordination number, Co-ordination number geometries of metal ions, type of ligands.</p> <p>B.Sc. III - Unit II- Kinetic aspects of metal complexes, stabilisation reactions of square planar complexes and factors affecting the rate of substitution reactions in square planar complexes.</p>
January, 2023	<p>B.Sc. II - Unit II- Isomerism in Co-ordination Compounds: Structural isomerism: Ionization, Linkage, coordination ligand isomerism.</p> <p>Stereoisomerism: geometrical isomerism: square planar metal complexes of type [MABCD] octahedral metal complexes of type - [MA₃B₃] optical isomerism: Tetrahedron complexes of type: [MABCD] octahedral complexes of type - [M(AA)₂B₂], [M(AA)₃].</p>

	<p>B.Sc. III - Organic - Unit II A.Organo- Metallic compounds:- Organomagnesium compounds- Grignard reagent, preparation, structure and chemical reactions. Organozinc compounds- Preparations and chemical reactions. Organolithium compounds- Preparations and chemical reactions.</p>
February, 2023	<p>B.Sc. II - Unit II- Revision B.Sc. III - Unit II- Organo sulphur compounds. Nomenclature, structural characteristics. Thiol, Thio-ether, sulphonic acid, sulphonamide and sulphaguanidine – methods of preparations and chemical reactions.</p>
March 2023	<p>B.Sc. II - Unit I- Revision B.Sc. III - Unit II- C.Organic synthesis by enolates: Acidity of hydrogen, alkylation of diethyl malonate and ethyl acetoacetate, synthesis of ethylacetoacetate- Claisen condensation. Keto-enol tautomerism in ethylacetoacetate. Alkylation of 1,3 dithiane. Alkylation and acetylation of enamine. Revision</p>