SEMESTER I			
Core I Plant Diversity I (Phycology, Mycology, Lichenology and Bryology)			
19PBOC11	**Hrs/week: 6**	**Hrs/Semester : 90**	**Credit :4**

Vision:

- To have a comprehensive idea on cryptogams.

Mission:

- To understand the taxonomy, characteristics and uniqueness of primitive plants.
- To have a broad knowledge on economic importance and ecological significance of lower plants

Course Outcome

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the uniqueness and distinguish between diverse groups of primitive plants using their characteristic features	1, 2	An
CO-2	discuss the different life cycle patterns of lower plants	1, 2	Cr
CO-3	know the basic skills and techniques in micropreparation of diversified cryptogams	6	Ap
CO-4	apply the practical knowledge to identify a various cryptogams	1, 6	Ap
CO-5	understand that the cryptogams are unique in plant kingdom	1, 2	Un
CO-6	describe the economic and ecological significance of lichens	1, 2	Ap
CO-7	know the origin and phylogenetic evolution of Bryophyte	1, 2	Re
CO-8	know the scientific contribution done by eminent scientists in the field of cryptogams	1, 2	Un

SEMESTER I			
Core I Plant Diversity I (Phycology, Mycology, Lichenology and Bryology)			
19PBOC11	**Hrs/week: 6**	**Hrs/Semester : 90**	**Credit :4**

Unit I

Algae: Classification of algae by F.E.Fritsh (1954). Contribution of Indian Phycologists: M.O.P. Iyyangar and T.V. Desikachary. General characteristics. Ultrastructure of Prokaryotic and Eukaryotic algal cells and their components: cell wall, protoplasm, flagella, eye spots, chloroplast, pyrenoid, nucleus and reserve foods. Algal cytology and genetics. Economic importance of algae.

Unit II

Habitat, range of thallus structure, vegetative, asexual, sexual reproduction and life cycle patterns of Cyanophyceae, Chlorophyceae, Bacillariophyceae, Phaeophyceae and Rhodophyceae. Fossil algae of above classes.

Unit III

Fungi: Classification of Fungi by Alexopoulos and Mims (1979). General characteristics. Diversity of somatic, reproductive and fruiting structures in different groups of fungi: Myxomycetes, Zygomycetes, Ascomycetes, Basidiomycetes and Deuteromycetes. Heterothallism and Parasexuality in fungi. Economic importance of Fungi.

Unit IV

Lichens: A general account of lichens - Structure, nutrition; reproduction, classification, occurrence and Inter-relationship of Phycobionts and Mycobionts, Ecological and economic importance of lichens.

Unit V

Bryophyta: Classfication of Bryophytes by Rothmaler (1951). Origin of Bryophytes. General characteristics. Morphological, anatomical structure, vegetative, sexual reproduction and alternation of generation of Marchantiales, Jungermaniales, Anthocerotales, Sphagnales and Polytrichales. Spore dispersal mechanism in bryophytes. Economic importance of Bryophytes.

Algae

Books for Reference:

1. Bilgrami, K.S. and L.B. Sinha, 2004. *A Text Book of Algae*. CBS Publication and distributors, New Delhi.
2. Fritsch, F.E. 1972. *The structure and reproduction of algae.Vol.I & II.* Cambridge University Press.
3. Kamat, N.D 1982. *Topics in Algae*.SaikripaPrakasam, Aurangabad.
4. Robert Edward Lee,2008.*Phycology*.Cambridge University Press
5. South, G.R. and Whittick, 1987. *Introduction to phycology,* Blank well Scientific Publications, London.

Fungi

Books for Reference:

1. Alexopoulos and Mim's, 1983. *Introductory Mycology,* Wiley Eastern Ltd. Hyderbad.
2. Johri R.M., Sneh Lata & Kavita Tyagi 2010. *Text Book of Fungi*. Dominant Publishers & Distributors Pvt.Ltd.
3. Smith, G.M. 1988. *Cryptogamic Botany Vol.I* Mc-Graw Hill Book Company, New York.

Bryophyta

Books for Reference:

1. Cavers, F. 1964. *Inter relationship of the Bryophyta.* Dawsons of pall mall. London.
2. Peter George 2010.*Hand Book of Bryophyta*. Rajat Publications .New Delhi.
3. Rashid, A. 1999. *An introduction to Bryophyta*.Vikas Publishing House Pvt. Ltd.
4. Watson, E.V. 1971. *Structure and life of Bryophytes*. Hutchinson University Library, London.

Lichen

Books for Reference:

1. Ahmadjian, V. and Mason E. Hale, M.E. 1973. *The Lichens.* Academic Press, New York

Practical

Hrs/Week - 2

- **Algae:** *Nostoc, Oscillatoria, Ulva*, *Padina*, *Turbinaria*, *Hypnea, Gracilaria*,.

Collection, identification and preservation of fresh water and Marine algae**.**
Preparation of algal herbaria

- **Fungi:***Xylaria*, *Polyporus*, *Agaricus*.

Observation and study of fungi under natural habitat.

- **Bryophyta :***Plagiochasma*, *Anthoceros*, *Sphagnum*, *Polytrichum*.
- **Lichens:** *Usnea*, *Parmelia*
- Field visit to any one of the ecosystems rich in algae

Submission

- Record Note Book
- Bottle specimens/herbarium specimens (any five)

Books for Reference:

1. Ashok M. Bendre and Ashok Kumar. 2009. *A Text Book of Practical Botany –Volume 1*. Rastogi Publications, Meerut, India
2. Srivastava H. N, 1987. *Practical Botany Volume I,* Pradeep Publications, Jalandhar

SEMESTER I			
Core II Plant Diversity II (Pteridophytes, Gymnosperms and Paleobotany)			
19PBOC12	**Hrs/week: 6**	**Hrs/Semester : 90**	**Credit :4**

Vision:

- To have a comprehensive idea on vascular cryptogams and phanerogams.

Mission:

- To understand the taxonomy, characteristics and uniqueness of higher plants.
- To understand the characteristics of fossil vascular plants and their geological age of origin.

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the uniqueness and distinguish between diverse groups of Pteridophytes and Gymnosperms using their characteristic features	1, 2	An
CO-2	discuss different life cycle patterns in different groups	1, 2	Cr
CO-3	know the basic skills and techniques in micropreparation and formulate methods to identify different groups	1, 6	Ap
CO-4	know the evolutionary significance of Pteridophyte	1, 2	Un
CO-5	infer pteridophytes are pioneer in the evolution of seed habit	1, 2	Re
CO-6	compare and contrast the origin and evolution of steles, foliage, seeded and seedless plants.	1, 2	An
CO-7	compare and contrast the seeded and seedless plants.	1, 2	Ev
CO-8	review critically the biology , ecology of fossils and methods of fossilization.	1, 7	Un

SEMESTER I			
Core II Plant Diversity II (Pteridophytes, Gymnosperms and Paleobotany)			
19PBOC12	**Hrs/week: 6**	**Hrs/Semester : 90**	**Credit :4**

Unit I

Pteriodophyta: Classification of Pteridophytes by Smith (1955). Origin and evolution of Pteridophytes. General characteristics. Telome concept. Stelar evolution in pteridophytes. Heterospory and seed habit. Theories and modifications of alternation of generations Economic importance of Pteridophytes.

Unit II

Morphological, anatomical structure, asexual and sexual reproduction of Psilotales (Phylogenetic position of Psilotales), Lycopodiales, Selaginellales, Isoetales and Equisetales, Ophioglossles and Filicales. Life cycle pattern in homosporous and heterosporous pteridophytes.

Unit III

Gymnosperms: Classification of Gymnosperms by K.R.Sporne (1965). General characteristics. Morphological, anatomical structure and reproduction of Cycadaceae, Ginkgoaceae, Cupressaceae, Podocarpaceae, Araucariaceae

Unit IV

Morphological, anatomical structure and reproduction of Ephedraceae, Welwitschiaceae and Gnetaceae. Affinities of Gymnosperms with Angiosperms and Pteridophytes. Economic importance of Gymnosperms.

Unit V

Paleobotany: Geological time scale – fossilization and Fossil types: Compressions, incrustation, casts, molds, petrifactions, coal balls and compactions. General characters of fossil Pteridophytes: *Horneophyton, Sphenophyllum and Calamites.* Fossil Gymnosperms: *Williamsonia and Cordaites.*

Pteridophyta:

Books for Reference:

1. Bower, F.D. 1988. *Primitive land plants. Vol.I & 2*. Arihant Publishers Jaipur.
2. Pandi, S.N., P.S. Trivedi, S.P. Misra, 2006. *A text Book of Botany Vol. II.* Vikas Publishing House Pvt. Ltd.
3. Parihar, N.S. 1967. *An introduction to Embryophyta, Pteridophyta.* Central Book Depot Publications in Botany, Allahabad.
4. Rashid, A. 1985. *An introduction to Pteridophyta*, Vani Educational Books.
5. Sundara Rajan S. 2009. *Introduction to Pteridophyta.* New Age International Publishers. New Delhi

Gymnosperms:

Books for Reference:

1. Chamberlain, C.J. 1986. *Gymnosperms.Structure and evolution.* CBS Publishers & Distributors, Delhi.
2. Johri R.M., SnehLata and Kavita Tyagi. 2010. *Text Book of Gymnosperms*. Wisdom Press, New Delhi.
3. Sporne, K.R.1974. *The Morphology of Gymnosperms*. B.I. Publications Pvt. Ltd., New Delhi.

Practical :

Hrs/Week – 2

- **Pteridophytes :** *Selaginella, Isoetes, Equisetum, Adiantum, Pteris.*
- **Gymnosperms :** *Cycas, Araucaria, Cupressus, Podocarpus, Gnetum,*
- **Fossils:** *Sphenophyllum, Calamites* (Pteridophytes) *Williamsonia* and *Cordaites* (Gymnosperms)

Submission - Record Note Book

Books for Reference:

1. Ashok M. Bendre and Ashok Kumar. 2009. *A Text Book of Practical Botany –Volume 1.* Rastogi Publications, Meerut, India
2. Srivastava H. N, 1987. *Practical Botany Volume I,* Pradeep Publications, Jalandhar

Semester II			
Core V	**Horticulture , Plant breeding and Evolution**		
19PBOC21	**Hrs/week:5**	**Hrs/Semester : 75**	**Credits : 4**

Vision:

- To promote, develop and disseminate horticultural and plant breeding technologies through the blend of traditional wisdom and modern scientific knowledge.

Mission :

- To understand the techniques and make significant contribution to an efficient and sustainable production of crops
- To understand the concept of plant breeding and evolution

Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	use the garden implements using in horticultural techniques	4	An
CO-2	identify good and healthy plants and seeds for propagation and develop skill in propagation of useful vegetable, fruit and garden plants.	4	Ap
CO-3	understand basic concepts of gardening and able to layout different types of gardens and suggest plant choices	4	Un
CO-4	understand the use of modern technologies on raising horticultural plants for economic benefits and adapt modern methods of irrigation system in order to conserve water	4, 7	Un
CO-5	equip knowledge on disease management, improved production, storage strategies and business practices.	7	An
CO-6	describe various selection techniques and methods that can be used in genetic improvement of self and cross pollinated crops	6	Ap
CO-7	describe various molecular breeding technique and method that could be used for genetic improvements of crops	2	Ap
CO-8	understand the genetic basis of evolution and evolutionary process	1	Ap

Semester II			
Core V	**Horticulture , Plant breeding and Evolution**		
19PBOC21	**Hrs/week:5**	**Hrs/Semester : 75**	**Credits : 4**

Unit I

Horticulture – definition, divisions and importance. Plant growing structures – objectives and types – green houses, hot beds, cold frames and conservatory - green house production system. Plant growth environment- Physical environment, Pest management- chemical and biological. Establishment and cultivation of orchard. Gardening - outdoor garden –types, principles, designing and garden components.

Unit II

Parameters associated with sexual propagation. Asexual reproducion - Natural, artificial methods. Seedage – characteristics of good seed, and seed treatment for germination – Transplanting of seedling. Propagation of horticultural crops – cuttage, layerage, graftage and budding.

Unit III

Indoor gardening - Purpose, plant choices, caring, potting media, disease and pest management of growing succulents, Terrarium, hanging basket. Bonsai -types and training of bonsai. Commercial gardening - cut flowers and economic flowers. Kitchen gardening – selection of site, lay out and choice of plants. Storage and preservation of fruits and vegetables.

Unit IV

Plant breeding: Nature and goals of plant breeding; Methods of Breeding self pollinated, cross pollinated and asexually propagated crops, pure line and mass selection. Plant transformation and genetically modified organisms in Agriculture: Role of *A.tumefaciens* in GMO development. Engineering of plasmids. Molecular marker and their role in plant breeding: RFLP's, AFLP's, SSR's and SNP's.

Unit V

Evolution: Introduction, Evolution and life, The genetic basis of evolution. Evolutionary process: Elemental forces, sources of variation, Role of natural selection and genetic Drift. Evolutionary Divergence: Races, species and isolating Mechanisms. The Origin of species Evolution above the species level.

Books for Reference:

1. AllardJohn, R.W. *Principles of plant breeding* Wiley & Sons, Inc.New York.
2. Chopra, V.L *Plant Breeding Theory and Practice*. Oxford and IBH Publishing Co. Pvt.Ltd. New Delhi.
3. Choudhri D and Amal Metha 2010. *Flower crops cultivation and management* Oxford book company . Jaipur
4. Edmund Senn - Andrew – Halfacre. 1977. *Fundamentals of Horticulture*. Tata Mc. Graw Hill.

5. Hartmann & Kester, 1989 – *Plant propagation*. Prentice – Hall of India Pvt. Ltd. New Delhi.
6. Kumar, N. 1997. *Introduction to Horticulture*. Rajalakshmi Publications, Nagercoil, India.
7. Mallikarjuna Reddy and Aparna rao 2010. *Plant propagation in horticulture*. Pacific book international. New Delhi.
8. Randahawa 1985. *Floriculture in India*. Allied publishers.
9. Sharma, J.R *Principles and practice of plant breeding* TataMcGraw-Hill Publishing Company Limited New Delhi.
10. Utpal Banerji 2008. *Horticulture* Mangal Deep Publication. Jaipur

Practical-
Hrs / Week: 2
Horticulture:

- Knowledge of garden implements and tools - Spade, Sprayer, Water can, Pruning scissor, Tiller, Digging fork, Pickaxe, Budding and Grafting Knife,
- Preparation of nursery and seed bed.
- Propagation -stem, leaf and root cutting.
- Propagation - air layering, budding and grafting technique.
- Designing kitchen garden, Rockery, Hanging basket, terrarium
- Flower arrangement and vegetable carving
- Preparation of potting mixture for different types of garden
- Preparation of natural rooting hormones/ foliage boosters/flowering boosters.

Plant breeding:

- Emasculation, bagging and crossing methods.Demonstration - Molecular breeding
- **Submission -** Record Note Book

Books for Reference: Jean Taylor , 1973. *Practical flower arranging*, The Hamlyn Publishing group Ltd., NewYork

SEMESTER II			
Core VII	**Taxonomy of Angiosperms**		
19PBOC23	**Hrs/week: 5**	**Hrs/Semester : 75**	**Credit : 4**

Vision:

- To provide a deep and practical understanding of floristic features of plants and their systematics

Mission:

- To identify the local flora up to the species level based on their morphological features
- To enable the students to get fair knowledge on different systems of classification and to have an insight on modern trends in classification of Angiosperms.

Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the basic principles and rules of botanical nomenclature, and use taxonomic literature and describe the general principles of classification and binomial nomenclature for species naming.	1	Ap
CO-2	relate taxonomy to other sciences	4	Re
CO-3	understand the preparation and importance of herbarium, role of BSI	6	Un
CO-4	identify the common species of plants growing in Thoothukudi and their systematic position, their distinguishing morphological/ecological attributes.	1	Ap
CO-5	utilize the taxonomical terminology for identification of taxa	1	Un
CO-6	understand the comparative account among the families of angiosperms.	4	Un
CO-7	able to gain proficiency in the use of keys and manuals for identifying any unknown plants to species level	7	Ap
CO-8	combine classical plant taxonomy with modern molecular phylogeny	1	An

SEMESTER II			
Core VII	**Taxonomy of Angiosperms**		
19PBOC23	**Hrs/week: 5**	**Hrs/Semester : 75**	**Credit : 4**

Unit I

Definition and objectives-brief history of plant taxonomy – Botanical Nomenclature- need for scientific names, polynomial and binomial nomenclature- ICN principles, names of taxa - genus, species, infra-specific categories, type method, citation, typification, effective and valid publication, retention and rejection of names-, principle of priority, conservation of names. Identification methods: use of floras, manuals and monographs - dichotomous keys (indented and bracketed key), guidelines for constructing dichotomous keys - interactive keys (computer aided).

Unit II

Taxonomic hierarchy - Ranks in the hierarchical system (order, family, genus, species and intra specific). Classification: relative merits and demerits of major systems of classifications- Linnaeus, Bentham and Hooker's and Angiosperm Phylogeny Group (IV). Current trends in biosystematics - Phenetics - numerical taxonomy- construction of taxonomic groups, applications, merits and demerits. Phylogenetic - Cladistics – phylogenetic terms and phylogenetic diagrams.

Unit III

Taxonomic evidences - Morphology, Cytology, Embryology and chemosystematics (Phytochemicals phenols, alkaloids, flavonoids and terpenoids). Molecular systematics (DNA bar coding). Herbarium methodology- Specimen preparation, maintenance, management and functions. Role of Botanical Survey of India. General account of Central National Herbaria, Calcutta (CAL) and regional herbaria - Madras Herbarium (MH).

Unit IV

A detailed study of vegetative and floral characters of the following families: Ranunculaceae, Capparidaceae, Tiliaceae, Meliaceae, Rhamnaceae, Sapindaceae, Fabaceae, Combretaceae, Asteraceae, Sapotaceae.

Unit V

Solanaceae, Boraginaceae, Convoluvaceae, Scrophulariaceae, Bignoniaceae, Verbenaceae, Nyctaginaceae, Orchidaceae, Commelinaceae and Cyperaceae.

Books for Reference :

1. Davis, P.H. and V.M. Heywood, 1983. *Principles of Angiospersm Taxonomy,* Olive & Byod, London.
2. Gurcharan Singh, 2004. *Plant Systematics* – Oxford & IBH Publishing Co., New Delhi.
3. Gurcharan Singh, 2012. *Plant Systematics* – Oxford & IBH Publishing Co., New Delhi.

4. Harborne, J.B. and B.L. Turner; 1984. *Plant chemo-systematics*. Academic Press, London.
5. Jeffrey, C.1982. *Introduction to plant Taxonomy*. Cambridge university Press Cambridge.
6. Johri R.M. and Sneb Lafa, 2005. *Taxonomy* – Sonali publications, New Delhi.
7. Pandey, B.P.2005. *Taxonomy of Angiosperms*. S.Chand & Company, New Delhi.
8. Stace C.A., 1989. *Plant taxonomy and Biosystematics* Edward. Arnold, London.
9. Saxena N.B. and S. Saxena, 2010. *Plant Taxonomy*. Pragati Prakashan Publishers.
10. Subrahmanyam, N.S. 2007. *Modern Plant Taxonomy*. Vikas Publishing House Pvt. Ltd. New Delhi.
11. Vashishta P.C., 1989, *Taxonomy of Angiosperms*, R.Chand & Co., New Delhi.

Practical
Hrs / Week - 2

1. Study of wild taxa representing different families and identification to species level.
2. Construction of taxonomic keys (dichotomous).
3. Field trips within and around the campus; compilation of field notes and preparation of herbarium sheets of such plants, wild or cultivated, as are abundant.
4. Training in using floras for identification of specimens described in the class.

Submission - Record Note Book, five herbarium sheets, fifteen photographs and field note book

Books for Reference

Gample J.S. *Flora of the Presidency of Madras – Vol I & II,* Reprint 1956, Published under Authority of Secretary of state for India in Council.

SEMESTER-I			
Core IV	**Histology, Embryology and Morphogenesis**		
19PBOCI4	**Hrs/week:5**	**Hrs/Semester : 75**	**Credits :4**

Vision: To have comprehensive idea on histology, reproductive biology and morphogenetic events in Angiosperms.

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Mission: This course is aimed at understanding the structure and functions of reproductive organs associated with seed development and the internal morphology of Angiosperms

Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	classify the shoot and root apical meristems	1,2	Ev
CO-2	explain the function and types of epidermal tissue systems	1,2	Ap
CO-3	Identify different types of cells through micro preparation and microscopic observation	4	An
CO-4	Give illustrious explanation and differentiate the primary and secondary structure of plant.	1,2	Un
CO-5	understand the mode of development of reproductive structures identify the different stages of dicot and monocot embryo	3,6	Ap
CO-6	explain the fertilization process including pollen pistil interaction and self incompatibility	1	Ev
CO-7	recognize different types of endosperm and their role in seed development	4	Re
CO-8	identify the different stages of dicot and monocot embryo	4	Ap

SEMESTER-I			
Core IV – Histology, Embryology and Morphogenesis			
Code:19PBOCI4	**Hrs/week:5**	**Hrs/Semester : 75**	**Credits :4**

Unit: I

Meristem- classification, shoot apical meristem and root apical meristem. Simple permanent tissues- parenchyma, collenchyma and sclerenchyma. Epidermal tissue system- Functions and types: Anomocytic, anisocytic, diacytic and paracytic. Trichomes - Stinging hairs, glandular hairs and peltate hair.

Unit: II

Complex permanent tissues- Components of xylem - Tracheids, Fibres, vessels, parenchyma. Wood anatomy: Xylem- Primary xylem, secondary xylem. tyloses-reaction wood, heart wood and sap wood, growth rings. Phloem- components, sieve elements, fibres, parenchyma. Cambium - origin, structure and function-seasonal activity of the cambium.

Unit: III

Secondary growth in dicot stem- *Polyalthia, Boerhaavia, Achyranthus, Antigonan,* dicot root - *Azadirachta.* Aerial root - *Tinospora* and *Vanda.* Dicot leaf - Dorsiventral and isobilateral leaf and monocot leaf.

Unit: IV

Microsporogenesis - Pollen wall, Pollen development Pollen storage, Pollen allergy,Megasporogenesis. Fertilization - barriers of fertilization. Endosperm - Types and haustoria. Organogenesis of dicot and monocot embryo. Apomixis and Polyembryony

Unit: V

Plant Morphogenesis - Definition – Polarity - as expressed in external and internal structures and in isolated cells. Symmetry - types. Differentiation as expressed in structure- effect of environment on differentiation - Factors controlling morphogenesis.

Books for Reference:

1. Bhojwani S S, S. P. Bhatnagar 2000. *The Embryology of Angiosperms* McGraw Hill
2. Catherine Easu, 1972, *Plant Anatomy*. 2nd Edition . Wiley Eastern Private ltd.
3. Chandurkar P. 1977. *Plant Anatomy* Oxford and IBH
4. Cutter, E.G. 1978.*Plant Anatomy*, Edward Arnold Publishers Ltd; London
5. Elezabeth G. Cutter, 1978- 2d ed., *Plant Anatomy*, Reading, Mass: Addison - Wesley Pub.Co.
6. Fahn A. 1990. *Plant Anatomy* Pergamon Press
7. Maheshwari P 1971 *An introduction to the Embryology of Angiosperms* Tata McGraw Hill Publishing Co New Delhi
8. Pandey B P 1978 *Plant Anatomy* S Chand Co
9. Pandey S N A Chadha. 2009. *Plant Anatomy and Embryology* Sangam Books Ltd

Practical
Hrs / week: 2
Anatomy

- Examination of different cells and tissue types
- Examination of Structural detail and identification of wood of some common Indian timbers (any four)
- Anomalous activity of cambium in *Polyalthia, Boerhaavia, Achyranthus, Antigonan,* dicot root -*Azadirachta.* Aerial root - *Tinospora* and *Vanda.*
- Double staining technique to study the stem and root prescribed in the syllabus.
- Study of leaf anatomy.

Microsporogenesis

- Pollen germination and pollen tube growth.
- Dissection of dicot embryo (globular, cordate and mature stage).
- endosperm haustorium from suitable seed.

Submission - Record Note Book

Books for Reference:

- Lamesh Rao and K E S Juneja, 1971. *Field Identification of fifty important timbers of India*, The manager of publications.

- Dnyansagar V R, 1986. *Cytology and Genetics*, Tata McGraw – Hill Publishing Company Ltd., New Delhi