Name of the teacher: Jagtap A.J.

Year: 2019-20

Semester: I

Subject: Taxonomy Of Angiosperms

Paper:I

Class: S Y B.Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	August 2019	1 & 2	12	8	Introduction to Plant Taxonomy Definition, scope, objectives and importanceIdentification, classification, nomenclature Concept of Systematics Systems of classification a)Artificial system- Carl Linnaeus , b)Natural system -Bentham and Hooker, c) Phylogenetic system- Engler and Prantl	8	Introduction to Plant Taxonomy Definition, scope, objectives and importanceIdentification, classification, nomenclature Concept of Systematics Systems of classification a)Artificial system- Carl Linnaeus , b)Natural system -Bentham and Hooker, c) Phylogenetic system- Engler and Prantl		
2	August 2019	3 & 4	12	12	c) Phylogenetic system- Engler and Prantl Study of Plant Families - Annonaceae, Meliaceae, Myrtaceae, Rubiaceae, Solanaceae, Asclepiadaceae, Euphorbiaceae andAmaryllidaceae	12	c) Phylogenetic system- Engler and Prantl Study of Plant Families - Annonaceae, Meliaceae, Myrtaceae, Rubiaceae, Solanaceae, Asclepiadaceae, Euphorbiaceae andAmaryllidaceae		
5	September 2019	1& 2	12	5	Taxonomic literature Sources of data for Systematics	5	Taxonomic literature Sources of data for Systematics		
6	September 2019	3 & 4	12	6	Botanical Nomenclature History Binomial nomenclature	6	Botanical Nomenclature History enclature		

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5	October 2019	1 & 2	12	4	Computer in taxonomy Digital /e-herbarium	4	Computer in taxonomy Digital /e-herbarium		
6	November 2019	3 & 4	6	5	Introduction to ecology	5	Introduction to ecology		
7	December 2019	3 & 4	6	4	Ecological grouping of the plants-Xerophytes, Mesophtes And Hydrophytes	4	Ecological grouping of the plants-Xerophytes, Mesophtes And Hydrophytes		

Signature of Teacher

Signature of Head of Department

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Department of Botany
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Science Faculty
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Arts,Science & Commerce
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Name of the teacher: Suryawanshi A.V. Year: 2019-2020 Semester: I

Subject: Plant Biotechnology Paper: II Class: S.Y .B. Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	March2021	3 & 4	11	5	**Introduction to Plant Biotechnology** 1. History and definition 2. Scope and importance of plant biotechnology 3. Current status of biotechnology in India. Structure and function of xylem, phloem and cambium Plant Tissue Culture 1 Concept of plant tissue culture and cellular totipotency 2 Basic techniques: Types of culture	5	**Introduction to Plant Biotechnology** 1. History and definition 2. Scope and importance of plant biotechnology 3. Current status of biotechnology in India. Structure and function of xylem, phloem and cambium **Plant Tissue Culture** 1 Concept of plant tissue culture and cellular totipotency 2 Basic techniques: Types of culture	Nil	--
2	April2021	1 & 2	11	07	3. Media preparation, sterilization, inoculation & Incubation 4. Hardening and Applications with reference to: Micropropagation 5. Somaclonal variation & Haploid	7	3. Media preparation, sterilization, inoculation & Incubation 4. Hardening and Applications with reference to: Micropropagation 5. Somaclonal variation & Haploid	1	Extra lecture was conducted

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					production 6. Protoplast fusion & Somatic hybrids 7. Embryo rescue & Production of secondary metabolites 8. Commercial Plant Tissue culture laboratories in Maharashtra and India.		production 6. Protoplast fusion & Somatic hybrids 7. Embryo rescue & Production of secondary metabolites 8. Commercial Plant Tissue culture laboratories in Maharashtra and India.		
3	April 2021	3 & 4	12	9	**Single Cell Protein** (SCP) 1. Concept and definition 2. Importance of proteins in diet 3. Production of SCP from *Spirulina* and Yeast 4. Importance & acceptability of SCP **Plant Genetic Engineering** 1. Introduction, concept 2. Tools of genetic engineering (restriction enzymes, ligases, plasmid vectors) 3. Gene cloning Technique 4. Applications of plant genetic engineering: insect pest resistance, 5. Abiotic stress tolerance & herbicide resistance	8	**Single Cell Protein** (SCP) 1. Concept and definition 2. Importance of proteins in diet 3. Production of SCP from *Spirulina* and Yeast 4. Importance & acceptability of SCP **Plant Genetic Engineering** 1. Introduction, concept 2. Tools of genetic engineering (restriction enzymes, ligases, plasmid vectors) 3. Gene cloning Technique 4. Applications of plant genetic engineering: insect pest resistance, 5. Abiotic stress tolerance & herbicide resistance	1	Extra Lecture
4	May 2021	3 & 4	12	5	**Genomics, Proteomics and Bioinformatics** 1 Genomics- concept & types, 2. Methods used for whole genome sequencing	5	**Genomics, Proteomics and Bioinformatics** 1 Genomics- concept & types, 2. Methods used for whole genome sequencing		--

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					3. Proteomics-concept, types 4. Methods used in proteome analysis 5. Bioinformatics-concept, database and its classification, data retrieval tools.		3. Proteomics-concept, types 4. Methods used in proteome analysis 5. Bioinformatics-concept, database and its classification, data retrieval tools.		
5	May 2021	1 & 2	12	5	**Bioremediation** 1 Introduction and concept, Microbial remediation 2. Phytoremediation **Biofuel technology** 1. Definition, Concept and types of Renewable and nonrenewable energy sources 2. Definition and concept of Biogas, Bioethanol & Biobutanol, 3. Biodiesel & Biohydrogen	5	**Bioremediation** 1 Introduction and concept, Microbial remediation 2. Phytoremediation **Biofuel technology** 1. Definition, Concept and types of Renewable and nonrenewable energy sources 2. Definition and concept of Biogas, Bioethanol & Biobutanol, 3. Biodiesel & Biohydrogen	1	Extra lecture was conducted

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TEACHING AND EVALUATION PLAN

Name of the teacher: Dr. Mahadik B. B. Year: 2019-2020

Semester: I

Subject: Plant Anatomy and Embryology Paper: I Class: S.Y .B. Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Dec 2020	2 & 4	11	8	**Introduction** Definition,Scope of plant anatomy **Epidermal tissue system** Structure, types and functions of epidermis, Stomata Epidermal outgrowths- **Mechanical tissue system** a) Inflexibility, b) Incompressibility, c) Inextensibility and d) Shearing stress 3.2 Vascular tissue system: Structure and function of xylem, phloem and cambium	8	**Introduction** Definition,Scope of plant anatomy **Epidermal tissue system** Structure, types and functions of epidermis, Stomata Epidermal outgrowths- **Mechanical tissue system** a) Inflexibility, b) Incompressibility, c) Inextensibility and d) Shearing stress 3.2 Vascular tissue system: Structure and function of xylem, phloem and cambium	Nil	--
2	Jan 2020	1 &2	11	7	**Normal secondary growth** Introduction Normal secondary growth in dicotyledonous stem Development of annual rings, periderm, bark, tyloses and lenticel **Anomalous secondary growth** Introduction	7	**Normal secondary growth** Introduction Normal secondary growth in dicotyledonous stem Development of annual rings, periderm, bark, tyloses and lenticel **Anomalous secondary growth** Introduction	1	Extra lecture was conducted

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					Causes of anomalous secondary growth Anomalous secondary growth in:		Causes of anomalous secondary growth Anomalous secondary growth in:		
3	Jan 2020	1 & 2	12	5	**Plant Embryology ntroduction** **Microsporangium and male gametophyte** tetrasporangiate anther Types of tapetum Sporogenous tissue Microsporogenesis Types of microspore tetrad Male gametophyte: structure and development of male gametophyte	5	**Plant Embryology ntroduction** **Microsporangium and male gametophyte** tetrasporangiate anther Types of tapetum Sporogenous tissue Microsporogenesis Types of microspore tetrad Male gametophyte: structure and development of male gametophyte	Nil	--
4	Feb 2020	3 & 4	12	4.	**Megasporangium and female gametophyte** Structure Types of ovules Types of megaspore tetrads Female gametophyte: structure of typical embryo sac Types of embryo sacs – monosporic, bisporic and tetrasporic	4	**Megasporangium and female gametophyte** Structure Types of ovules Types of megaspore tetrads Female gametophyte: structure of typical embryo sac Types of embryo sacs – monosporic, bisporic and tetrasporic		--
5	Mar 2020	1 & 2	12	6	**Pollination and Fertilization:** Introduction and definition Types of pollination Germination of pollen grain Entry of pollen tube- porogamy, mesogamy and chalazogamy Double fertilization and its significance.	6	**Pollination and Fertilization:** Introduction and definition Types of pollination Germination of pollen grain Entry of pollen tube- porogamy, mesogamy and chalazogamy Double fertilization and its significance.	1	Extra lecture was conducted

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					Endosperm and embryo Endosperm: Types – nuclear, helobial and cellular,Structure of Dicotyledonous and Monocotyledonous embryo		**Endosperm and embryo** Endosperm: Types – nuclear, helobial and cellular,Structure of Dicotyledonous and Monocotyledonous embryo	

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Name of the teacher: Suryawanshi A.V. | Year: 2019-2020 | Semester: I

Subject: Plant Physiology | Paper: II | Class: S.Y .B. Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2019	3 & 4	9	6	Introduction to Plant Physiology 1. Introduction and Scope 2. Applications of plant physiology Absorption of water 1. Role of water in plants 2. Mechanisms of water absorption with respect to crop plants 3. Factors affecting rate of water absorption Ascent of sap 1. Introduction and definition	6	Introduction to Plant Physiology 1. Introduction and Scope 2. Applications of plant physiology Absorption of water 1. Role of water in plants 2. Mechanisms of water absorption with respect to crop plants 3. Factors affecting rate of water absorption Ascent of sap 1. Introduction and definition	Nil	--
2	Dec 2019	1& 2	12	6	2. Transpiration pull or cohesion-tension theory, evidences and objections 3. Factors affecting ascent of sap **Transpiration** 1 Definition, Types of transpiration – cuticular, lenticular and stomatal 2 Structure of stomata, Mechanism of opening and closing of stomata – Steward's hypothesis,	6	2. Transpiration pull or cohesion-tension theory, evidences and objections 3. Factors affecting ascent of sap **Transpiration** 1 Definition, Types of transpiration – cuticular, lenticular and stomatal 2 Structure of stomata, Mechanism of opening and closing of stomata – Steward's hypothesis,	Nil	--

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					3. Active K+ transport mechanism 4. Factors affecting the rate of transpiration **5. Nitrogen metabolism** 1. Introduction and role of nitrogen in plants 2. Nitrogen fixation by *Rhizobium* and BGA 3. Symbiotic nitrogen fixation, nitrogenase enzyme- structure and function		3. Active K+ transport mechanism 4. Factors affecting the rate of transpiration **5. Nitrogen metabolism 7L** 1. Introduction and role of nitrogen in plants 2. Nitrogen fixation by *Rhizobium* and BGA 3. Symbiotic nitrogen fixation, nitrogenase enzyme- structure and function		
3	Dec 2019	3 & 4	11	6	4. Non-symbiotic nitrogen fixation 5. Importance and production technique of BGA 6. Denitrification, ammonification and nitrification 7. Reductive amination and transamination **6. Seed dormancy and germination** 1. Definition, types of seed dormancy and germination 2. Methods to break seed dormancy	06	Non-Symbiotic nitrogen fixation 5. Importance and production technique of BGA 6. Denitrification, ammonification and nitrification 7. Reductive amination and transamination **. Seed dormancy and germination** 1. Definition, types of seed dormancy and germination 2. Methods to break seed dormancy	1	Extra lecture was conducted sunday
4	January 2020	1 &2	11	6	Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor Index	6 Nil	3. Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor Index	Nil	--

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						Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor Index Physiology of flowering 1. Photoperiodism – Concept, definition, short day plants, long day plants and day neutral plants. 2. Phytochrome theory, role of phytohormones in induction and inhibition of flowering 3. Applications of photoperiodism 4. Vernalization–concept and definition,	6	Physiology of flowering 1. Photoperiodism – Concept, definition, short day plants, long day plants and day neutral plants. 2. Phytochrome theory, role of phytohormones in induction and inhibition of flowering 3. Applications of photoperiodism 4. Vernalization–concept and definition, mechanism of vernalisation, applications of vernalisation and devernalization		
12	6 5	January 2020	3 & 4	12	6				

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