PRAMUKH SWAMI SCIENCE & H.D.PATEL ARTS COLLEGE, KADI
DEPARTMENT OF BIOLOGY
BOTANY PRACTICAL INDEX
SEMESTER-III

Core Compulsory Course in BOTANY **PC-BOT-211** ***(Morphology, Gymnosperm and Palaeobotany, Cell Biology)***				
Sr. No.	**Name of Experiment**	**Page No.**	**Date**	**Sign**
1	**Bracts:** **Foliaceous bract**: *Adhatoda vasica,*, **Petaloid bract:** *Bougainvillea spectabilis,* **Spathe**: *Rhoeo discolor,* **Involucre,** *Helianthus annuas* and **Epicalyx:** *Hibiscus rosa-sinensis*			
2	**Inflorescence:** **Racemose:** **Raceme:** *Caesalpinia***, Spike:** *Achyranthes* **Umbel: Simple:** Onion **and Compound:** Coriander **,** **Capitulum:** Sunflower**.** **Cymose:** **Solitary : Terminal:** *Datura* **, Axillary:** Shoeflower **, Monochasial: Helicoid:***Hamelia* **;** **Scorpoid:** *Heliotropium* **Dichasial**:*Clerodendrum*,**Polychasial**:*Calotropis*			
3	**Flower**: **Actinomorphic**:Shoe- flower, **Zygomorphic**:Pea/Bean, **Hypogynous**:*Datura*, **Perigynous:**Rose, **Epigynous**: *Coccinia.* **Calyx, Corolla**: Polysepalous/ Polypetalous: Mustard, Gamosepalous/ Gamop etalous:*Datura.* **Perianth**:*Crinum*			
4	**Aestivation**: **Valvate**: Calyx of *Datura* **Twisted**: Corolla of *Hibiscus,* **Imbricate**:*Crotalaria*/Bean, **Quincuncial**: Corolla of *Citrus*/ *Murraya or* Calyx of *Ipomoea*, **Vexillary**:*Butea/*Pea flower.			
5	**Androecium**: **Cohesion**: Monadelphous: Shoeflower, Diadelphous: Bean/Pea, Polyadelphous:*Bombax.* **Attachment***: Dorsifixed: Sesbania*, Basifixed: *Adhatoda* and Versatile: *Crinum* /Grass			

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6	**Gynoecium:** Apocarpous ovary: Rose, Syncarpous ovary: Shoe flower. **Placentation:** Axile: Shoe flower, Marginal: Pea/Bean, Parietal: *Argemone* Basal: Sunflower.			
7	Study of mode of pollination as per theory syllabus through fresh/preserved specimens.			
8	***Cycas:*** Vegetative structures, Micro sporophyll, Megasporophyll T.S. of *Cycas* leaflets to show transfusion tissue, T.S of coralloid root. *Cycas:* Microspores			
9	**Fossils/Palaeobotany:** **Fossil Pteridophytes:-** Rhynia, *Lepidodendron, Lepidostrobus, Lepidocarpon, Lepidodendron.* **Fossil Gymnosperms-:-** *Lyginopteris oldhamia*, *Lagenostoma lomaxii*, *Lyginopteris oldhamia*.			
10	To study various stages of Mitotic division in Onion root tip.			
11	To study various stages of Meiotic division in flower bud.			
12	Study of cell wall and plasma membrane through Microphotographs/charts/diagrams/slides.			

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Core Compulsory Course in BOTANY **PC-BOT-212** ***(Plant Physiology, Plant Ecology, Genetics)***				
Sr. No.	**Name of Experiment**	**Page No.**	**Date**	**Sign**
1	**Perform following physiological experiments:** 1. To show the process of osmosis through potato Osmoscope/Colocasia petiole. 2. To show the process of Plasmolysis using *Rhoeo* leaf peelings and sucrose solutions. 3. To separate Starch and Salt by Dialysis. 4. To study the property of Mechanical adsorption of colloids using sand particles. 5. To study the property of Electrical adsorption of colloids using Whatman No. 1 filter paper. 6. To study phenomenon of diffusion through ring formation using ammonia and hydrochloric acid.			
2	**Demonstrate following physiological experiments:** 1. To study osmosis using Thistle funnel. 2. To study imbibitional pressure exerted by imbibed seeds. 3. To show the process of exosmosis by using green grapes and salt solution. 4. To show the process of endosmosis by using dried black grapes and water. 5. To show the phenomenon of Tyndall effect.			
3	1. To determine the minimum size of Quadrat (Sampling unit) by species area curve method to study the grassland communities. 2. To determine the minimum number of Quadrat (Sampling unit) to be laid down in the field to study the grassland communities. 3. To Determine the Frequency of any five plants of Grassland communities using Quadrat, then distribute them among Raunkiaer's frequency classes. Compare with the Normal frequency diagram using graph paper. 4. To determine the abundance o f any fiv e plant species using quadrat of any size (area) to study the grassland communities. 5. To determine the density of any five plant species using quadrat of unit size (area) to study the grassland communities.			

4	Ecological adaptations- Morphological and anatomical studies of following plant parts: *1.Hydrilla* stem, *2.Eichhornia* petiole 3.Sunflower stem 4.Sunflower leaf, *5.Nerium* leaf *6. Capparis* stem.			
5.	Genetically problems based on (a) Polygenic inheritance (b) Multiple alleles.			