

B.Sc. BOTANY: Semester - 3

Practical: Discipline Specific Core Course (DSCC)

Title of the Course and Code:

BOT-A-3.2: PLANT ANATOMY AND DEVELOPMENT BIOLOGY

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/ Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
BOT-A-3.2	DSCC	Practical	02	04	52 hrs	3hrs	25	25	50

LIST OF EXPERIMENT TO BE CONDUCTED

Practical No.1

- i) Study of meristem (Permanent slides/ Photographs).
- ii) Study of Simple Tissues (Parenchyma, Collenchyma and Sclerenchyma) and Complex Tissues (xylem and phloem).

Practical No.2

Maceration technique to study elements of xylem and phloem, Study of primary structure of dicot root, stem and leaf (Sunflower) and monocot root, stem and leaf (Maize)

Practical No.3

Study of Normal secondary growth structure in dicot stem and root (Sunflower) and Anomalous secondary growth: *Aristolochia*, *Boerhaavia* (dicot stem) *Dracaena* (monocot stem)

Practical No. 4

Study of trichomes (any three types) and stomata (any three types) with the help of locally available plant materials

Practical No. 5

Permanent slides of Microsporogenesis and male gametophyte Mounting of Pollen grains of Grass and Hibiscus and Pollinia of Calotropis

Practical No. 6

Pollen germination (hanging drop method) and Effect of Boron and Calcium on pollen germination

Practical No. 7

Permanent slides of types of ovules, Megasporogenesis & embryo sac development and types of placentation: Axile, Marginal and Parietal types. Sectioning of ovary, for the studied types of placentation

Practical No. 8


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Mounting of embryo: Tridax and Cyamopsis, Mounting of endosperm: Cucumis

Practical No. 09

Histochemical localization of proteins/ carbohydrates

Practical No. 10 and 11

Mini project work in groups of 3-5 students, from the following list

- a) Study of pollen morphology of different flowers with respect to shape, colour, aperture etc.
- b) Pollen germination of different pollen grains and calculates percentage of germination.
- c) Calculating percentage of germination of one particular type of pollen grain collected from different localities/ under different conditions.
- d) Study of placentation of different flowers.
- e) Any other relevant study related to Anatomy / Embryology.

Text Books for Reference:

1. Bhojwani and Bhatnagar, Introduction to Embryology of Angiosperms –Oxford & IBH, Delhi
2. Bhojwani Sant Saran, 2014.Current Trends in the Embryology of Angiosperms, Woong-Young Soh, Springer Netherlands,
3. Coutler E. G. , 1969. Plant Anatomy – Part I Cells and Tissues – Edward Arnold, London.
4. Dickison, W.C. (2000). Integrative Plant Anatomy, Harcourt Academic Press, USA
5. Eames A. J. - Morphology of Angiosperms - Mc Graw Hill, New York.
6. Esau, K. 1990. Plant Anatomy, Wiley Eastern Pvt Ltd New Delhi
7. Evert, R.F. (2006) Esau's Plant Anatomy: Meristem, Cells, and Tissues of the Plant Body: Their Structure, Function and Development. John Wiley and Sons, Inc
8. Fahh, A.1992. Plant Anatomy, Pergamon Press, USA
9. Johri, B.M. L., 1984.Embryology of Angiosperms, Springer-Verlag, Netherlands.
10. Karp G., 1985. Cell Biology; Mc.Graw Hill Company
11. Maheshwari,P 1950. An introduction to the embryology of angiosperms. New York: McGraw-Hill
12. Mauseth, J.D. (1988). Plant Anatomy, the Benjammin/Cummings Publisher, USA.
13. Nair P .K .K - Pollen Morphology of Angiosperms - Scholar Publishing House, Lucknow
14. Pandey S.N. 1997, Plant Anatomy and Embryology .A. Chadha, Vikas Publication House Pvt Ltd;
15. Pandey, B. P., 1997. Plant Anatomy, S.Chand and Co. New Delhi
16. Raghavan, V., 2000. Developmental Biology of Flowering plants, Springer, Netherlands.
17. Saxena M. R. – Palynology – A treatise - Oxford & I. B .H., New Delhi.
18. Shivanna, K.R., 2003. Pollen Biology and Biotechnology. Oxford and IBH Publishing Co. Pvt.Ltd. Delhi.
19. Vashishta .P.C .,1984. Plant Anatomy – Pradeep Publications – Jalandhar
20. Vashishta, P.C. 1997. Plant Anatomy, Pradeep Publications



S. G. V. C. Vidya Prasarak Trust's,
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Ref. No. :

Date : 2023-24

Department of Botany

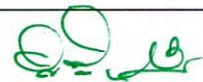
Title of the Project Work: Types of Placentation

B.SC VI Semester- 2023-24

Sl. No	Register Number	Name of the Students
01	U15NU22S0004	Shivaleela Kanakal
02	U15NU22S0005	Shashikala Awati
03	U15NU22S0016	Shabana Awati
04	U15NU22S0027	Sneha Awati
05	U15NU22S0028	Deepa Wadawadagi
06	U15NU22S0029	Chaitra Nadagouda
07	U15NU22S0030	Akshata Bhovi
08	U15NU22S0031	Nasareen Diddimani
09	U15NU22S0035	Vidyashree Ambiger
10	U15NU22S0039	Soumya Hangaragi
11	U15NU22S0040	Shahinsaba Mulla
12	U15NU22S0043	Zaveriya Momin
13	U15NU22S0044	Aftab Pinjar
14	U15NU22S0049	Prajwal Pathepurmath
15	U15NU22S0051	Ganesh Murodi
16	U15NU22S0052	Zaboor Shivalli


Co-ordinator,

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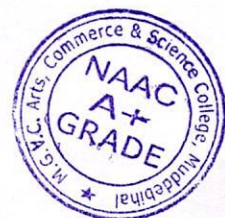
PRINCIPAL,

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**S.G.V.C Vidya Prasarak Trust's
M.G.V.C. ARTS, COMMERCE AND SCIENCE COLLEGE
MUDDEBIHAL**

DEPARTMENT OF BOTANY

**Project work on Types of Placentation, 2023-24
Class- B.Sc.III Semester**



Sl. No	Reg. No	Name of the students
01	U15NU220004	Shivalila.S. Kanakal
02	U15NU220005	Ganesh Muradi
03	U15NU220016	Soumya Hangaragi
04	U15NU220027	Nasarin Diddimani
05	U15NU220028	Prajwal Pattepuramath
06	U15NU220029	Chaitra Nadagouda
07	U15NU220030	Bibiuzma Mudnal
08	U15NU220031	Akshata Bovi
09	U15NU220035	Vidyashree Ambiger
10	U15NU220039	Shahinsaba K Mulla
11	U15NU220040	Deepa Vaddodagi
12	U15NU220043	Sneha Aski
13	U15NU220044	Shashikala S A wati
14	U15NU220049	Zaveriya A Momin
15	U15NU220051	Aftab K Pinjar
16	U15NU220052	Zahurahamed N Shivalli

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