

W.E.F. 2016-17

I B. Sc - SEMESTER- II: BOTANY THEORY SYLLABUS**Paper –II : Diversity of Archaeogoniates & Plant Anatomy**

Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: BRYOPHYTES

(12hrs)

1. Bryophytes: General characters, Classification (up to classes)
2. Structure, reproduction and Life history of *Marchantia*, and *Funaria*.
3. Evolution of Sporophyte in Bryophytes.

UNIT - II: PTERIDOPHYTES

(12hrs)

1. Pteridophytes: General characters, classification (up to Classes)
2. Structure, reproduction and life history of *Lycopodium*, and *Marsilea*.
3. Heterospory and seed habit.
4. Evolution of stele in Pteridophytes.

UNIT – III: GYMNOSPERMS

(12hrs)

1. Gymnosperms: General characters, classification (up to classes)
2. Morphology, anatomy, reproduction and life history of *Pinus* and *Gnetum*
3. Economic importance with reference to wood, essential oils and drugs

UNIT – IV: Tissues and Tissue systems

(12hrs)

1. Meristems - Root and Shoot apical meristems and their histological organization.
2. Tissues – Meristematic and permanent tissues (simple, complex, secretory)
3. Tissue systems-Epidermal, ground and vascular.

UNIT – V. Secondary growth

(12hrs)

1. Anomalous secondary growth in *Achyranthes*, *Boerhaavia* and *Dracaena*.
2. Study of local timbers of economic importance-Teak, Rosewood, Red sanders and Arjun (Tella maddi).

Signature of the Chairman / Chairperson (B.O.S.) :1. *S. Sujatha* 13/12/16**Signature of the Members:**2. *D. S. D.* 13/12/20163. *B. L. S.* 13/12/16

Suggested activity: Collection of *Marsilea* sporocarp, *Pinus* needles, male and female cones, study of *Pinus* pollen grains, collection of locally available economically useful timbers.

Books for Reference:

1. Cavers, Frank () : The inter-relationships of the Bryophytes
New Phytologist, Indian Reprint.
2. Smith, G.M. (1955) : Cryptogamic Botany Vol. II. (2nd Edition)
(Bryophytes & Pteridophytes) Tata McGraw Hill Publishing Co., New Delhi.
3. Parihar, N.S. () : An Introduction to embryophyta – Vol.II. Bryophyta
Central Book Depot, Allahabad.
4. Watson, E.V. (1968) : British Mosses & Liverworts Cambridge University Press, U.K
5. Eames, A.J. (1936) : Morphology of Vascular Plants (Lower Groups)
McGraw Hill, N.Y.
6. Parihar, N.S. (19) : An Introduction to Embryophyta Vol.II Pteridophyta
Central Book Depot., Allahabad.
7. Smith, G.M. (1955) : Cryptogamic Botany Vol.II (2nd Edn.,) (Bryophytes &
Pteridophytes) Tata McGraw Hill Publishing Co., New Delhi.
8. Sporne, K.R. (1970) : The Morphology of Pteridophytes (The Structure of
Ferns and Allied Plants) Hutchinson University Library, London
9. Bierhorst, D.W. (1971) : Morphology of Vascular Plants, The MacMillan Co.,
N.Y. & Collier- MacMillan Ltd., London.
10. Coulter, J.M.& C.J. Chamberlain (1964) : Morphology of Gymnosperms
Central Book Depot, Allahabad.
11. Sporne, K.R. (1971) : The Morphology of Gymnosperms (The Structure and
Evolution of Primitive seed Plants) Hutchinson University Library, London.
12. Esau, K. (1965) : Vascular Differentiation in Plants. Holt, Rinehart & Winston,
N.Y., Chicago, San Fransisco, Toronto, London.
13. Eames, A.J., & Mc Daniels, L.H.(1979) : An Introduction to Plant anatomy
Tata-McGraw-Hill Publishing Co., (P) Ltd. Bombay, New Delhi.
14. Esau. K.(1980) : Plant Anatomy, (2nd Edition) Wiley Eastern Ltd., New Delhi.

Signature of the Chairman / Chairperson (B.O.S.) :

Signature of the Members:

1. *K. Sujatha* 13/12/16
 2. *A. M. Iyer* 13/12/2016
 3. *B. Radha* 13/12/16

W.E.F. 2016-17
I B.Sc SEMESTER -II
BOTANY PRACTICAL SYLLABUS
Paper-II: Diversity of Archegoniates & Plant Anatomy
Total hours of laboratory Exercises 30 hrs @ 2 per week

1. Morphology (vegetative and reproductive structures) , anatomy of the following :
Marchantia, Funaria, Lycopodium and *Pinus*.
2. Anatomy:
 - a) Demonstration of double staining technique.
 - b) Tissue organization in root and shoot apices using permanent slides
 - c) Preparation of double staining slides
 - d) Anomalous secondary structure of *Achyranthes, Boerhavia* and *Dracaena*.
 - e) Anatomical study of wood in T.S., T.L.S. and R.L.S.
3. Field visits to local timber depots.

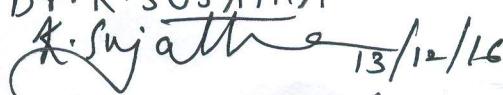


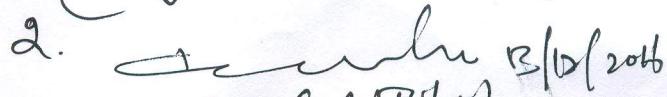
13/12/16

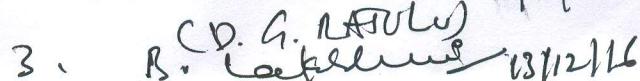
Signature of the Chairman / Chairperson (B.O.S.) :

1. Dr. K. SUJATHA

Signature of the Members:

1.  13/12/16

2.  13/12/16

3.  13/12/16

W.E.F. 2016-2017

I B.Sc., SEMESTER -II: BOTANY PRACTICAL MODEL PAPER II
II P: Diversity of Archegoniates & plant Anatomy

1. Section cutting of material -A 9 Marks
(Slide 3 marks, diagrams-3 marks, Identification-3 marks)

2. Section cutting of material -B 9 Marks
(Slide 3 marks, diagrams-3 marks, Identification-3 marks)

3. Section cutting of material -C 10 Marks
(Slide 4 marks, diagrams-3 marks, Identification-3 marks)

4. Identification of spotters -D, E, and F $3 \times 4 = 12$ marks

5. Record (submission compulsory) 10 marks

Total : 50 Marks

Key:

- A. Bryophyta/ Pteridophyta material
- B. Gymnosperm material.
- C. Anatomy material.
- D. Whole specimen or permanent slide of Bryophyta/ Pteridophyta
- E. Whole specimen or permanent slide of Gymnosperm.
- F. Whole specimen or permanent slide of wood.

Signature of the Chairman / Chairperson (B.O.S.) :

Signature of the Members:

1. K. Sujatha 13/12/16

2. B/12/2016

3. B. 13/12/16

W.E.P. 2016 - 2017

I - B.Sc BOTANY
SEMESTER - II
Paper II - T Diversity of Archaeogonates & Plant Anatomy

Time: 3 hrs

Max Marks: 75

SECTION - A (సెక్షన్ - ఎ)
(Short Answer Type Questions)
Answer any **FIVE** Questions

5X5 = 25M

వ్యవహారించు ప్రత్యేక విషయములు ప్రాయము

(Draw neat and labelled diagrams where ever necessary)

అవసరమైన చోట పటము గీసి భాగములను గుర్తించుము

- | | |
|--|---|
| 1. Funaria Protonema | - వ్యవహారించు ప్రత్యేక విషయము |
| 2. Lycopodium Cone L.s | - లైకోపోడియం శంఖము నియమాలు |
| 3. Gnetum Ovule | - నీటము అండము |
| 4. Parenchyma | - మృదుకణజాలము |
| 5. Properties of wood | - కలప ధర్మము |
| 6. Gemma Cup | - జిమ్మాకప్పు |
| 7. Stemata Pinus - Pollen grain | - స్టేమా పైన్స్ - పోలెన్ గ్రేహము |
| 8. Types of vascular bundles | - నాళికాపుంజాలు - రకాలు |

SECTION - B (సెక్షన్ - బి)

Answer All questions

5X10 = 50M

క్రింది వానిలో అన్ని ప్రత్యేక విషయములు ప్రాయము

- 9 (a). Evolution of sporophytes in Bryophyta.
బ్రయోఫైట్స్ లో సిద్ధ బీజదాల పరిణామ క్రమాన్ని వివరించుము.
(or)
(b). Give an account of sexual reproduction in Marchantia.
మార్చాంషియాలో లైంగిక ప్రత్యుత్పత్తిని వివరించుము.
10. (a). Write an essay on heterospory and seed habit.
భిన్న సిద్ధ బీజశ మరియు విత్తన ధారణ పైన వ్యాసాన్ని ప్రాయండి.
(or)
(b). Internal structure of Marsilea sporocarp.
మార్సిలియా స్పోరోకార్పు అంతర్లుర్మాణమును వివరింపుము.

*S. 13/12/2016
BOS Chaitanya*

1. K. Sujatha .. 13/12/16
2. *A. S. 13/12/2016*
3. *S. Lakshmi 13/12/2016*

10. Write different types of Ion uptake? Describe Active Transport of Ions in detail?

అయిన్న శోషణ ఎన్ని రకాలు? సక్రియ శోషణ విధానాన్ని వివరించండి.

[OR]

Describe the process of protein synthesis in plants.

మొక్కలలో జరుగు ప్రోటీన్ సంస్థేషణను గూర్చి వ్రాయుము.

11. What is 'Z' scheme, Descirbe in detail.

'Z' నమూనా అంటే ఏమిటి? వివరించండి.

[OR]

Substantiate how C₄ Plants are more efficient than C₃ plants

C₄ మొక్కలు C₃ మొక్కలకంటే సమర్థమైనవి. ఎలా?

12. What is EMP Pathway, Describe in detail?

E.M.P. మార్గము అనగానేమి? విశదీకరించండి.

[OR]

Describe the process of β - oxidations of lipids.

క్రొవ్వు అమ్లాలలో జరుగు β - ఆక్సికరణను వివరించండి.

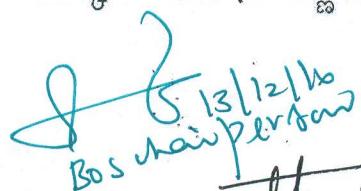
13. Define phyto hormone. Describe the effect of auxins on plants.

పైటో హర్మోన్సు నిర్వచించండి? ఆక్సిన్లపై వ్యాసము వ్రాయండి.

[OR]

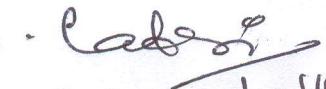
Describe different types of photoperiodism write about the role of phytochrome in flowering.

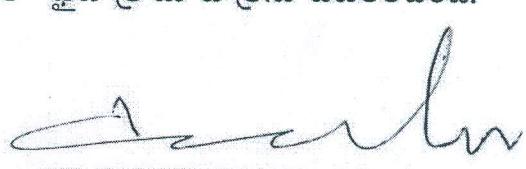
మొక్కల కాలావధిని వర్ణించండి. మొక్కలు పుష్పించుటలో పైటోక్రోమ్ పొత్తను వివరించండి.


B.O.S. MEMBER
13/12/16

1. K. Sujatha 13/12/16

2.  13/12/2016

3.  13/12/16


(D.GOVINDARAJULU)
B.O.S. MEMBER