

V.S.M. COLLEGE (A), RAMACHANDRAPURAM
III B.Sc., SEMESTER- V, BOTANY SYLLABUS
PAPER-VI: PLANT ECOLOGY & PHYTOGEOGRAPHY
PAPER CODE -1652506

Total hours of teaching 60 hrs @ 3 hrs per week

Credits:3
(12 hrs)

UNIT – I. Elements of Ecology

1. Ecology: definition, branches and significance of ecology.
2. Climatic Factors: Light, Temperature, precipitation.
3. Edaphic Factor: Origin, formation, composition of soil and soil profile.
4. **Biotic Factor: Interactions between plants and animals.**

UNIT– II. Ecosystem Ecology

(12 hrs)

1. Ecosystem: Concept and components, energy flow, Food chain, Food web, Ecological pyramids.
2. Productivity of ecosystem-Primary, Secondary and Net productivity.
3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.

UNIT – III. Population & Community Ecology

(12 hrs)

1. Population -definition, characteristics and importance, outlines –ecotypes.
2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, competition.
3. **Interaction between plants growing in a community.**
4. Plant succession (Hydrosere and Xerosere)

UNIT – IV. Phytogeography

(12 hrs)

1. Principles of Phytogeography, Distribution (Endemic and discontinuous species)
2. Phytogeographic regions of India.
3. Phytogeographic regions of World.
4. Endemism – types and causes

UNIT- V: Plant Biodiversity and its importance

(12 hrs)

1. **Definition, levels of biodiversity-genetic, species and ecosystem.**
2. Biodiversity hotspots- Criteria, Biodiversity hotspots of India.
3. Loss of biodiversity – causes and conservation (*In-situ* and *ex-situ* methods).
4. Seed banks - conservation of genetic resources and their importance
5. Role of UNDP, UNEP and NBA in conservation of biodiversity.

Additional Inputs:

1. Environmental and Wild life Acts

Suggested activity:


1. Collection of different soils, studying their texture.
2. Observing polluted water bodies.
3. Student study projects.
4. Debates on man's activity on ecosystem and biodiversity conservation methods.
5. Visiting a nearest natural vegetation area.


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III B.Sc., SEMESTER- V

Prescribed Books:


Cell biology, Genetics, Ecology and Biodiversity- Telugu Academy publications (old).
Plant Ecology and Phytogeography- Vikas Publications


Books for Reference:

1. Daubenmire, R.F. (): Plants & Environment (2nd Edn.,) John Wiley & Sons., New York.
2. Puri, .G.S. (1960): Indian Forest Ecology (Vol.I & II) Oxford Book Co., New Delhi & Calcutta.
3. Billings, W.B. (1965): Plants and the Ecosystem Wadsworth Publishing Co., Inc., Belmont.
4. Misra, R. (1968): The Ecology work Book Oxford & INH Publishing Co., Calcutta
5. Odum E.P. (1971): Fundamentals of Ecology (2nd Edn.,) Saunders & Co., Philadelphia & Natraj Publishers, Dehradun.
6. Odum E.P. (1975): Ecology By Holt, Rinert & Winston.
7. Oosting, H.G. (1978): Plants and Ecosystem Wadworth Belmont.
8. Kochhar, P.L. (1975): Plant Ecology. (9th Edn.,) New Delhi, Bombay, Calcutta-226pp.,
9. Kumar, H.D. (1992): Modern Concepts of Ecology (7th Edn.,) Vikas Publishing Co., New Delhi.
10. Kumar H.D. (2000): Biodiversity & Sustainable Conservation Oxford & IBH Publishing Co Ltd. New Delhi.
11. Newman, E.I. (2000): Applied Ecology Blackwell Scientific Publisher, U.K.
12. Chapman, J.L&M.J. Reiss (1992): ecology (Principles & Applications). Cambridge University Press, U.K.
13. Cain, S.A . (1944): Foundations of Plant Geography Harper & Brothers, N.Y.
14. Mani, M.S (1974): Ecology & Biogeography of India Dr. W. Junk Publishers, The Haque
15. Good, R. (1997): The Geography of flowering Plants (2nd Edn.) Longmans, Green & Co., Inc., London & Allied Science Publishers, New Delhi


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