

MCC, Department of Botany

M. PHIL. BOTANY

ALGOLOGY

PAPER II & III

Paper II Taxonomy of Algae

Unit-I

Classification of Algae.

Unit -II

Ultrastructure organization of cell organelles.

Unit - III

Fossil algae and Phylogeny of algae.

Unit - IV

Taxonomy, structure, reproduction and life-cycles of the members of the following classes: Cyanophyceae, Prochlorophyceae, Rhodophyceae, Phaeophyceae, Chlorophyceae and Charophyceae.

Unit - V

Taxonomy, structure, reproduction of the members of Chrysophyceae, Prymnesiophyceae, Xanthophyceae, Eustigmatophyceae, Bacillariophyceae, Dinophyceae, Raphidophyceae and Cryptophyceae.

Paper III Applied Algology

Unit - I

Algal Biomass: Culture and cultivation of economically important freshwater and Marine algae.

Unit - II

Algal Biotechnology: Application of cell fusion, tissue culture and hybridization techniques in algae; Bioreactors, Continuous algal production using waste water.

Unit - III

Biofuels and Biofertilizer: Methane and Hydrogen production; Liquid seaweed fertilizer and seaweed compost.

Unit - IV

Algal Polysaccharides (Agar Agar; carraginin and alginic acid); algae in Pharmaceutical industries.

Unit- V

Algae and Pollution; allergic atmospheric algae; Toxic algae.

Suggested Reading

- BARSANTI, LAURA AND PAOLO GUALTIERI 2005 *Algae-Anatomy, Biochemistry and Biotechnology*. Taylor & Francis, London, New York.
- BECKER, E. W. 1994 *Microalgae-Biotechnology and microbiology*. Cambridge University Press.
- CHANDRAMOHAN, D. 2007 Prospects of Biodiesel from marine microorganisms. Proceedings of the National Workshop on BIODIESEL Organised by School of Energy, Environment & Natural Resources, Madurai Kamaraj University, Madurai and Ahimsa Agri division, Chennai, 17th and 18th October, 2007.
- CHAPMAN, V.L. AND D.L. CHAPMAN 1980 *Seaweed and their uses*. Chapman & Hall, London.
- DESIKACHARY, T.V. 1959 *Cyanophyta*. ICAR, New Delhi.
- DESIKACHARY, T.V., V. KRISHNAMURTHY AND M.S. BALAKRISHNAN. 1990 *Rhodophyta*. Madras Science Foundation, Madras.
- DIXON, B.S. 1973 *Biology of the Rhodophyta*. Oliver and Boyd, Edinburgh.
- DODGE, L.D. 1973 *The fine structure of algal cells*. Academic Press, New York.
- FRITSCH, F.E. 1935 *Structure and Reproduction of Algae, Vol. I*, Cambridge University Press, Cambridge.
- FRITSCH, F.E. 1945 *Structure and Reproduction of Algae, Vol. II*, Cambridge University Press, Cambridge.
- IYENGAR, M.O.P. AND T.V. DESIKACHARY. 1981 *Volvocales*. ICAR, New Delhi.
- Lembi, Carole, A. and J. Robert Waaland 1988 *Algae and human affairs*. Cambridge University Press, Cambridge.
- LOBBAN, C.S. AND M.J. WYNNE (Eds.) *The Biology of Seaweeds*. Blackwell Scientific Publications, Oxford.
- PAL, B.P., B.C. KUNDU, V.S. SUNDARALINGAM AND G.S. VENKATARAMAN. 1962 *Charophyta*. ICAR, New Delhi.
- PARKER, SYBIL, P. (Ed. In Chief) 1982 *Synopsis and Classification of living organisms*. McGraw Hill Book Company, New York.
- PHILIPPOSE, M.T. 1967 *Chlorococcales*. ICAR, New Delhi.

RAMANATHAN, K.R. 1964 Ulotrichales. ICAR, New Delhi.

RANDHAWA, M.S. 1939 Zygnemaceae. ICAR, New Delhi.

SOUTH, G.R. AND A. WHITTICK. 1987 Introduction to Phycology. Blackwell Scientific Publications, Oxford.

TRIVEDI, P.C. (Ed.) 2001 Algal Biotechnology. Pointer Publishers, Jaipur, India.

VENKATARAMAN, L. V. AND E. W. BECKER. 1985 Bioiehnology and Utilization of Algae- The Indian Experience. Department of Science and Technology, New Delhi and Central Food Research Institute, Mysore, India.

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