**M.Phil. Algology**

**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, Prymensiophyceae, Xanthophyceae, Eustigamtophyceae, Bacillariophyceae, Dinophyceae, Raphidophyceae and Crytophyceae.

**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 Universilty, Madurai and Ahimsa Agri division, Chennai, 1 ih and 18th October, 2007.

CHAPMAN, V.L.. AND DL.. 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.

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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.

PHILIPOSE, 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.