

Pre-Ph. D. Paper- III (Special)

Recent advances in Phycology

Unit I

History of Phycology and algal studies in India.

Recent trends in algal taxonomy (3)

Basis of classification, Modern classification of algae, Important classes and their interrelationships, Evolution and phylogeny (7)

Unit II

Algal biodiversity- Distribution in fresh and marine habitat, Algal blooms (3)

Culture and cultivation of Algae- Phycological methods for isolation , purification, culturing and cultivation, Commercial cultivation (Mass cultivation) of economically important algae, Methods of preservation (7)

Unit III

Biochemistry and Genetics

Pigments, Carbohydrates, Lipids, Proteins and important bioactive compounds (5)

Chromosome number , use of algal systems in genetical studies. Work done in India (5)

Unit IV

Algae and Human Welfare

Biotechnological potential of algae- SCP, Biofertilizer, Bioremediation, Biofuels, Nutraceuticals, Raw material for industries, Algal toxins (10)

References:

- Fay, P. 1983 The blue Greens, Arnold Heinemann Publ. London
- Fritsch- Structure and reproduction in algae Vol I and II
- Kumar H. D. and H. N. Singh 1990 Algae Affiliated East West Press Pvt. Ltd Publ. New Delhi
- Trainer, F. R. 1978 Introductory Phycology, John Wiley and Sons Publ. New York
- Vashishtha, B. R. 1995 Algae S. Chand and co Ltd , New Delhi
- P. C. Trivedi, Algal Biotechnology, Pointer publication
- C. V. Venkataraman and Bekar, cultivation of algae
- Algae- An introduction to Phycology- C. Van Den Hoek, Mann and Johns, Cambridge University Press
- Algal Biotechnology- Mihir Kumar Das
- Algal culturing technique- Robert A. Anderson, Elsevier Academic press
- Phycology- Robert E. Lee, Cambridge University press.
- Algal biofuel- Bhatanagar and Saxena, Studium press, India Ltd.
- Algal Biology and Biotechnology- Khattar and Singh