MBH 403: PHYCOLOGY AND MYCOLOGY 52 HRS

UNIT-1 (13 hr)

History and Recent developments in Mycology, General characters, Distribution and Nutrition in fungi, Ultra structure of fungal cell, cell wall, hyphal structure and growth, Reproduction in fungi-Vegetative, Asexual and Sexual. Fungal systematics- Chytridiomycota, Hypochytridiomycota, Oomycota, Zygomycota, Basidiomycota, Ascomycota, Deuteromycota, Fungal fruiting bodies, Types of spores-motile and non-motile cells, and spore dormancy.

UNIT II (13 hr)

Folicolous and Endophytic fungi, Plant Fungal Diseases; Different types of mycosis- Cutaneous, subcutaneous and Systemic mycosis. Mycotoxins, Opportunistic fungal infections, lab diagnosis and treatment of fungal infections: Aspergillosis, Candidiasis, Dermatitis. Economic importance of fungi: fungi in Agriculture, Industry, Medicine, Fungi as biocontrol agent, Mycorrhiza- Ecto and Endomycorrhizae, Vesicular and ArbuscularMycorrhizae, Lichens and their importance. Macrofungi and their importance in food industries: cultivation of mushrooms and applications, Role of fungi in biodegradation.

UNIT III (13 hr)

Distribution, Classification, Morphology &Uultrastucture of Cyanophycean cell, Microalgae and Macroalgae, Prokaryotic- blue green algae and eukaryotic algae- green, red, brown. Photosynthetic pigments, Significance of pigments (structure of chlorophyll a, b, c, and c2, xanthophyll, carotenoids and other pigments), Algal habitats: fresh water, marine water, soil algae,Cultivation and Reproduction in algae,measurement of algal growth

UNIT IV (13 hr)

Uses of algae as SCP, *Spirulina* &*Chlorella*, Algal biofuel: Bio diesel, bio ethanol, mass culturing of alga, extraction and refinement, symbiotic algae, lichens, coral reefs and sea sponges, Algae as indicators of pollution, eutrophication, algal blooms, algal toxins, algae as raw food and feed, algae as biofertilizers Algae with special references to soil fertility, Industrially important algal products, commercial products, food and medicine, Role of algae in heavy metal removal, immobilized and labelled algae, strain selection and large scale cultivation, Role of algae in water purification.