Subject Code : P8MBE7

Elective Course VII (EC) Marine Microbiology

Unit: I Marine Microbial disserts

Marine environment – see-benthic & littoral zone, saltpan, mangroves and estuarine microbes, microbial loop – marine microbial community – planktons, bacteria, fungi, protozoa.

Unit: II Marine Extremophiles

Survival at extreme environments – starvation – adaptive mechanisms in thermophilic, alkalophilic, asmophilic and barophilic, psychrophilic microorganisms – hyperthermophiles and halophiles – importance in biotechnology.

Unit: III Symbiotic microbes

Microbe-microbe interactions – Lichens, antagonistic interactions – amensalism, mycoparasitism – Animal-microbe interaction – Ectosymbiosis of Protozoa, Runinant symbiosis – Plant-microbe interaction – *Rhizobium, Mycorrhizae, Anabaena* – sponge.

Unit: IV Marine Microbial Disease

Marine food borne pathogens & Water borne pathogens – *Aeromonas, Vibrio, Salmonella, Pseudomonas, Leptospira, Cornybacter.*

Unit: V Marine Microbial Biotechnology

Production and applications of marine microbial products – pigments – Astaxanthin, β carotene – enzyme – antibiotics – polysaccharide – sea food preservation methods.

References:

Prescott, L.M., Harley J.P. Klein (1999). Microbiology, WCB, Mc Grow Hill Publications

Raina M. Maier, Ian L. Pepper, Charles, P. Gerba (2006). Environmental Micrology, Academic press.

Jamesh W. Nybakker (2001). Marine Biology, Benjamin Cummings

Shimshon Belkin and Rita R. Colwell (2005). Ocean and Health: Pathogens in the marine environment. Springer.

Scheper, T. (2005). Advances in Biochemical Engineering/Biotechnology-Marine Biotechnology I. Springer

Bhakuni, D.S. and Rawat, D.S. (2005). Bioactive marine natural products. Anamaya Publishers, New Delhi.