

SEMESTER – I

Core Paper – III

MYCOLOGY AND PHYTOPATHOLOGY

Instructional Hrs.:75

Sub. Code:15BOPC103

Max. Marks: CIA 25; ESE -75

Credits:4

Objectives: To understand the range of thallus- Structure- Reproduction methods and life cycle pattern of Fungi and to understand plant – pathogen interaction

UNIT -I

15 Hrs.

FUNGI : Classification of fungi (Alexopoulos , 1969). Cell wall composition; mode of nutrition- Phycomycetes (Chytridiomycetes- Hypochytridiomycetes- Oomycetes - *Zygomycetes*)

UNIT -II

15 Hrs.

Range of Structure- Reproduction and Interrelationship of Myxomycetes- Ascomycetes (Hemiascomycetidae, Plectomycetidae, Hymenoascomycetidae & Loculoascomycetidae).

UNIT -III

15 Hrs.

Range of Structure - Reproduction and Interrelationship of Basidiomycetes and *Deuteromycetes*. Heterothallism - *Economic importance of fungi*.

UNIT IV

15 Hrs.

Plant Pathology: Classification of plant diseases –Principles of plant disease control- cultural, biological and chemical - Effect of environment on disease development. Causal organism, Symptoms, Disease cycle and control measures of Black wart of Potato, *Blight of Paddy* & Powdery mildew disease of Cucurbitis.

UNIT V

15 Hrs.

Pathogenesis: Penetration and entry - Enzymes in plant disease – cell wall degrading enzyme. *Toxins*, Effect of infection on physiology of host (general account) -Defense mechanism

Note: Italics denote Self Study Topics.

Practicals :

Mycology : Albugo- Saprolegnia- Phyllachora- Alternaria and Puccinia

Phytopathology:

1. Estimation of total chlorophyll in infected and healthy plants.
2. Biological control by Tobacco leaf extracts- turmeric- neem oil- Pongamia oil.
3. Anatomical studies of infected regions.
4. Comparison between infected and uninfected plants with reference to total carbohydrate and protein.

References:

1. **Lee, R.E.**, "*Phycology*", Cambridge University Publications, London,1987.
2. **Alexopoulos, C.J.** and **Mims C.W.**, "*Introductory Mycology*", Wiley Eastern PVT., LTD., New Delhi, Second Edition, 1962.
3. **Ainsworth, S.C.**, **Sparrow, F.E.** and **Sussman, A.D.**, "*The fungi and advanced treatise*", Vol. I, II, III, IVA & IVB.
4. **Vashishta, B.R.**, **Sinha, A.K.**, *Fungi Botany for degree students .S.Chand&co,New Delhi,2007.*
5. **Mehrotra, R.S** and **Aneja, K.R.** An introduction to Mycology. New age international Pvt.Ltd.Mumbai,1998.
6. **Agrios, George, N.**, "*Plant Pathology*", Academic Press, Sandiego, London. 1988.
7. **Aneja, K.R.**, "*Experiments in Microbiology, Plant Pathology and Tissue culture*", Wishwa Prakashan, New Delhi,1996.
8. **Baker, F** and **Cook, R.J.**, "*Biological control of plant pathology*",S. Chand And Company LTD., New Delhi, 1979.
9. **Bilgrimi, K.S.** and **Dube, H.C.**, "*A text book of Modern Plant Pathology*", Vikas Publishing House, PVT., LTD., Kanpur,1980.
10. **Mehrotra, R.S.**, "*Plant Pathology*", Tata Mc Graw Hill Publishing Company Ltd. , New Delhi,1996.