

Paper – X : Applied entomology

Unit I

Economic classification of Insects – Economic importance of insects – Biology of Honey bee and silk worm moth – Culture methods for honey bee and silk worm – Applications used and problems related to these cultures.

Unit II

Other productive insects – Lac insect – Biology and Lac cultivation – Cochineal insects – Insect Galls – Helpful insects – Pollinators, Predators, Parasitoids and scavengers – weed killers – soil builders.

Destructive Insects – Insect pests – types – transformation of innocuous insect to pest status – Insect – Host plant interactions – Insect resistant cultivars and Transgenic plants.

Unit III

Biology, damage caused and control methods of any 5 chief insect pests of agricultural importance : Pests of paddy, wheat, sugar cane, cotton, ground nut, coconut, mango, citrus, bhendi and brinjal – Pests of stored products.

Unit IV

Principles of Insect control – Prophylactic measures – cultural, mechanical, physical methods – Genetic control and quarantine.

Biological control : Parasites, predators and Microbial agents.

Chemical methods : Pesticides, classification – types of formulations – mode of action- toxicity – insecticide resistance – environmental safety.

Non-conventional methods : Use of insect growth regulators (IGR), repellents, anti-feedants, pheromones, chemosterilants and irradiation.

Integrated Pest Management (IPM) – definition, Integration of methods – potential components – need for IPM and uses.

Unit V

Medical and veterinary entomology : Arthropods as vectors of human diseases – Biology of house fly, mosquito, flea, louse and sandfly – control methods.

Mode of transmission and epidemiology of relapsing fever, plague, malaria, dengue, encephalitis and filariasis.

Pests of cattle, sheep and poultry (Biology and control measures of any 5).

Recommended Text Books :

VASANTHARAJ DAVID, B (2001) Elements of Economic Entomology, Popular Book Depot., Chennai – 600 015.

DHALIWAL, G.S., and RAMESH ARORA, (2001) Integrated Pest Management : Concepts and Approaches Publishers, New Delhi.

RATHINASWAMY, T.K., (1986) Medical Entomology, S.Viswanathan and co., Madras.

Reference Books :

METCALF, C.V., and FLINT, W.P., (1979) Destructive and Useful Insects : Their Habits and control. Tata McGraw Hill Publications, New Delhi.

NAYAR, K.K. et.al., (1983) Economic Entomology and Applied Entomology, Oxford and IBH Publishing Co., New Delhi

NAYAR, K.K., T.N. ANANTHAKRISHNAN, and B.V.DAVID (1986) General and Applied Entomology, Tata McGraw Hill Publications, New Delhi

RAMAKRISHNA IYAR (1984) Economic Entomology of South India, International Book and Periodicals Supply House, New Delhi

WEBSTER H. SILL Jr., (1982) Plant Production – An Integrated Inter – disciplinary Approach.

Iowa University Press, Arnes, Iowa.