

M.Sc.(Ag.) Semester – III Examination, 2014

Plant Protection

Course : AEN – 508 (Toxicology of Insecticides)

Time: 3 Hours

Full Marks: 50

Questions are of value as indicated in the margin

Answer **any five** questions

1. Define insect toxicology. What are the main sub-branches of toxicology? Explain the molecular basis of DDT's mode of action. 1+2+7=10
 2. Define selectivity. What are the major types of selectivity? Discuss the basic principles regarding selectivity. What is VSR and what are the limitations of it? 1+2+3+4=10
 3. Describe how nerve impulse is transmitted to axon of a neuron? Classify insecticides according to their mode of action. Describe the mode of action of the following insecticides: (a) azadirachtin (b) rotenone (c) precocenes (d) flubendiamide. 4+2+4=10
 4. Define bioassay. Discuss the utilities of bioassay. Write importance of probit transformation. Denote the significance of LD-P line. 1+4+2+3=10
 5. Define insecticide resistance. Discuss the physiological mechanism of resistance in brief. Outline the strategies to overcome the problem of resistance. 1+4+5=10
 6. Answer **any four** of the following: 2.5×4=10
 - (a) Phase-I reaction in metabolism of insecticide.
 - (b) 'LD₅₀ is a criterion for comparing relative toxicity' – why?
 - (c) 'Malathion is a selective insecticide' – why?
 - (d) 'Dusting is done in the early morning hours' – why?
 - (e) Disadvantages of IGRs.
 - (f) What is Bt technology?
 7. What are the precautions to be taken during application of insecticides? Give a detailed note on the factors that affect toxicity. 7+3=10
 8. Write short notes on **any four** of the following: 2.5×4=10
 - (a) Potter's tower
 - (b) Fumigant
 - (c) Avermectins
 - (d) Dose-mortality curve
 - (e) Chemigation
 - (f) Pyrethrum
 - (g) Synergists
 - (h) Insecticide act
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