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S. No. of Question Paper : 6818

Unique Paper Code : 217572

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Name of the Paper : Conventional and Biological Insecticide

Name of the Course : B.Sc. (Prog.)

Semester : V

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Answer any five questions.

All questions carry equal marks.

1. Answer the following :

- (a) Define acaricide and insecticide.
- (b) Define toxicity and L D-50 value.
- (c) Depict the structural formula of Physostigmine.
- (d) Differentiate between chlordene and chlordane with the help of structural formula.
- (e) Depict the structural formula of Acetylcholine.

2. Answer the following :

- (a) Define contact and systemic insecticides.
- (b) Discuss the toxicity in carbamates, when hydrogen of methen is replaced by alkyl group.
- (c) Write the structural formula of carbamic acid and its carbamate derivative.
- (d) Why organophosphorous pesticides are preferred over organochlorine compounds ?
- (e) Write the structural formula of nicotine and anabasin.

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3. Answer the following :

- (a) Discuss desulfuration with suitable example.
- (b) What is sulfoxidation ? Explain with suitable example.
- (c) Discuss preparation of carbaryl with the help of chemical reactions.
- (d) Discuss reduction in parathion.
- (e) Why organochlorine insecticide is not recommended to use together with lime ?

4. Answer the following :

- (a) Discuss the oxidation of Endosulfan in reference of toxicity.
- (b) What happens when endosulfan is treated with NaOH ?
- (c) Write the structural formula of heptachlor and its epoxide.
- (d) What happens when carbaryl is treated with NaOH ?
- (e) What happens when organo-chlorine insecticide is treated with alc. NaOH ?

5. Answer the following :

- (a) What is dealkylation ? Explain with suitable example.
- (b) Discuss paraoxon formation with suitable example.
- (c) Discuss acidic hydrolysis of Malathion with chemical equations.
- (d) Write the structural formula of methyl parathion.
- (e) How the metabolite Malaoxon is formed in insects ? Explain with chemical equations.

6. Answer the following :

- (a) Discuss the action of pyrethroids.
- (b) Write down the structural formula of Allethrin and fenvalerate.

- (c) Which of the following derivative of carbamates is strong inhibitor of AChE, $R-O-CONHCH_3$ and $R-O-CONHCF_3$? Explain.
- (d) Arrange the anticholinesterase activity and toxicity of carbamate in increasing order, with the presence of the following alkyl groups, $-C_4H_9$, $-CH_3$, $-C_3H_7$, $-C_2H_5$.
- (e) Discuss Chemosterilants.

7. Answer the following :

- (a) Discuss the principle involved in the action of organophosphorous insecticides.
- (b) Write the structural formula of two repellants.
- (c) Discuss the mode of action of organo-chlorine insecticides.
- (d) Discuss the action of antifeedants.
- (e) Discuss sex attractants in short.