

M.Sc. (Ag.) Semester-III Examination, 2016
Soil Science and Agricultural Chemistry
Course No.: SSC-510
(Chemistry of Pesticides)

Time: 3 hours

Full Marks-50

Questions are of values as indicated in the margin

Answer *any five* questions

- 1. Answer the following questions (any four):** **4x2.5= 10**
 - a. What happens when parathion undergoes oxidation and malathion undergoes isomerization?
 - b. How glyphosate treated plants are killed?
 - c. When copper sulphate reacts with the lime in an alkaline medium?
 - d. Why synthetic pyrethroid insecticides are preferred over natural pyrethroid in agriculture?
 - e. What happens when pyrethrin –II and cinerin- I are hydrolyzed?
 - f. What do you mean by biomagnifications of pesticides?
 - g. Chlorination of benzene and chlorine in presence of organic peroxide.

- 2. Outline the synthesis and use of the following herbicides – (any four) :** **4x 2.5=10**
 - i. Paraquat
 - ii. Glyphosate
 - iii. Oxadiazon
 - iv. Proponil
 - v. Alachlor
 - vi. Simazine
 - vii. 2,4-D

- 3. Outline the synthesis and use of the following pesticides- (any four):** **4x2.5= 10**
 - i. Burgundy mixture
 - ii. Chlorpyrifos
 - iii. Dimethoate
 - iv. Carbofuran
 - v. Ethion
 - vi. Propoxur

- 4. a) How would you prepare Bordeaux mixture? Give chemical reaction and justify its basis of fungicidal action.**
b) Outline the routes of synthesis of – captan, chloranil and carboxin **4+6= 10**

- 5. a) What are the physicochemical properties of soil influences the activity of pesticide in soil?**
b) Briefly discuss the processes that affect the fate of pesticides in soil. **5+5= 10**

- 6. a) Why do pesticide residues need to be analyses?**
b) Describe the principles involved for extraction and cleanup process.
c) Define the terms- ADI, NOAEL and MRL **2+5+3= 10**

- 7. a) Illustrate with reaction the synthesis of cyhalothrin, cypermethrin and deltamethrin.**
b) Write down the structure activity relationship of – (i) Pyrethroid insecticides and (ii) OP insecticides. **6+4= 10**

- 8. Write short notes on – (any five)** **5x2 = 10**
 - i. Mode of action of Cu-fungicides
 - ii. EC formulation
 - iii. Pest resistance to pesticides
 - iv. Sink and pathway of pollutant
 - v. Characteristics of Ideal fungicides.
 - vi. Good Agricultural practice (GAP)
 - vii. Recovery analysis
 - viii. Biodegradation of pesticides.