

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, December 2020

Course : Pesticide Chemistry
Program : B.Sc. (H) Chemistry
Course Code: CHEM 2017K

Semester : III
Time : 03 hrs
Max. Marks: 100

Section A

Instructions:

1. Each Question will carry 5 Marks
2. Complete the statement /select the correct answer(s)
3. Answer should be fill in blank, true or false.

S. No.	Question	CO
Q 1	(i) The amount to which a chemical is toxic to the plant is known as..... (ii) Lindane is an organic substance (True or False) (iii) Gram/gram of animal body weight ,of pesticide is known as LD ₅₀ (True or False) (iv) The chemical obtained from chrysanthemum that has insecticidal properties is known as parasite. (True or False) (1+2+1+1 Marks)	CO3
Q 2	(i) Only drugs of the same structural class should be studied by 3D QSAR (True or False) (ii) Alchemy and Chem 3D are molecular modelling packages (True or False) (iii) Molar refractivity is a steric factor, represented by MR in QSAR (True or False) (iv) What software programme is used to determine the Verloop steric parameter..... (v) The symbol P represent in a QSAR equation is (5 * 1 Marks)	CO2
Q 3	(i) Phytotoxicity is the potential of a pesticide for causing damage to plant (True or False) (ii) Defoliation ability is the potential of a pesticide for causing damage to plants (True or False) (iii) Pesticides used to control plant pest are known as weed agents (True or False) (iv) Cost is not usually found on a pesticide label (True or False) (1+1+2+1 Marks)	CO1
Q 4	(i) Insecticides that act by permeating the entire plant are known as..... (ii) Systematic insecticides does act by permeating the entire plant. (True/False) (iii) Preplant herbicide is applied to the soil before planting a crop (True or False) (2+2+1 Marks)	CO1
Q 5	(i) The condition when the predators and parasitoids that would naturally control the pests, are temporarily removed or drastically reduced in numbers, is known as Resistance (True or False) (ii) Postplant herbicide is applied to the soil before planting a crop. (True or False) (iii) Herbicides are used to kill thepests. (2+1+2 Marks)	CO3

Q 6	(i) Active ingredients is responsible for the killing action of pesticides. (True/False) (ii) Among water, chloroform, benzene and acetone solvents systems, DDT have the least solubility in.... (iii) Entry of pesticides in the human body can occur through..... (1+2+2 Marks)	CO1
Section B Instructions: 1. Each question will carry 10 marks 2. Write short/brief notes of 1-2 page answer. 3. Question 11 has internal choices, and hence you have to attempt only one out of two questions. 4. Draw the neat diagram, to justify your answer as well as to score higher marks.		
Q 7	(i) Explain the QSAR techniques alongwith justify its application in the field of the discovery/development of the potential candidate as pesticide. Mention its pros and cons, as well as its applicability in industries. (8 marks) (ii) The QSAR equation relating the insecticidal activity of a series of dimethyl phenyl phosphonates versus σ is shown below- $\log\left(\frac{1}{C}\right) = 2.823\sigma - 0.347. (r^2 0.951, r 0.977, s 0.285)$ What does the words r & s represent? (2 marks)	CO2
Q 8	Define the below mentioned terms in detail. (i) Phytoalexins (ii) Toxicols (iii) Resurgence (iv) Phytotoxicity (v) Repellents (vi) plant quarantine (vii) lethal factor and (viii) Adjuvant. (ix) LD ₅₀ and (x) Log P	CO1
Q 9	(i) Discuss the method of preparation and uses of Alachlor and Chloranil types of pesticides. (ii) Write down the name and structure of any five chemicals used as contact poison and stomach poison in pesticide chemistry.	CO3

Q 10	<p>Among the following methods, discuss any three with a neat statement and sketch to defend your statement.</p> <p>(i) Cultural (ii) Mechanical (iii) Chemical (iv) Physical and (iii) Biological method of pest control.</p>	CO2
Q 11	<p>Write a detailed note on Organochlorines citing their preparation method and applications.</p> <p style="text-align: center;">OR</p> <p>Malathion and parathion are important class of the organophosphate types of pesticides. Discuss their application and method of preparation giving balanced chemical reactions.</p>	CO3
<p>Section C</p> <p>Instructions:</p> <p>1. Question is of 20 marks 2. Write long answer of 2-3 page. 3. Draw the neat diagram to justify your answer. 4. <u>Internal choices is there for 12, and hence you have to attempt only one question.</u></p>		
Q 12	<p><i>Bio-magnification, Resurgence, Bio-Pesticides, Traps and Kaolin Clay</i>, are the key techniques to control the pest, in the pest management. Define these terms alongwith their uses in detail.</p> <p style="text-align: center;">OR</p> <p>Discuss in details with a neat diagram about different routes of pesticide entry in the human body, alongwith their rate of absorption in decreasing order.</p>	CO2