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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANGEMENT**  
**Chemistry of Pesticides, Soil Science & Fertilizers (2301101)**

Day & Date: Friday, 05-01-2024  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 60

**Instructions:** 1) All questions are compulsory.  
 2) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative.**

**08**

- 1) Red colored soil is due to the presence of \_\_\_\_\_ in the soil.
  - a) Boron
  - b) Iron
  - c) Nitrogen
  - d) Potassium
- 2) Fire Hazard causes due to \_\_\_\_\_ fertilizers.
  - a) Ammonium nitrate
  - b) Diammonium phosphate
  - c) Calcium nitrate
  - d) None of these
- 3) Ethylene gas is used for \_\_\_\_\_.
  - a) Fruit ripening
  - b) Plant growth
  - c) Soil development
  - d) None of these
- 4) Which of the following is concentrated organic manure?
  - a) F.Y.M.
  - b) Oil cake
  - c) Guanod
  - d) Compost
- 5) Interveinal chlorosis occurred due to \_\_\_\_\_.
  - a) Ca
  - b) Mg
  - c) Cu
  - d) K
- 6) Biogas plant produces \_\_\_\_\_ gas.
  - a) Chlorine
  - b) Butane
  - c) Ethane
  - d) Methane
- 7) Gibberellic acid is found in \_\_\_\_\_.
  - a) Avena sativa
  - b) Giberella fujikori
  - c) Corn germ oil
  - d) Micoriza
- 8) Which of the following is micronutrient?
  - a) Boron
  - b) Nitrogen
  - c) Phosphorous
  - d) Potassium

**B) Fill in the blanks.**

**04**

- 1) Urea contains \_\_\_\_\_ of nitrogen.
- 2) \_\_\_\_\_ plant hormone is growth retardant.
- 3) Bangalore method of composting was developed by \_\_\_\_\_.
- 4) Guano is obtained from excreta & dead bodies of \_\_\_\_\_

- Q.2 Answer the following. (Any six) 12**
- a) Define micronutrients.
  - b) Write the application of cytokinins in agriculture.
  - c) Define pest and pesticide.
  - d) Write examples of nitrogenous fertilizers.
  - e) Define biofertilizers.
  - f) Define manure.
  - g) Write the deficiency symptoms of boron in plant.
  - h) What is soil profile?
- Q.3 Answer the following. (Any three) 12**
- a) Write the deficiency symptoms of Molybdenum in plant.
  - b) Describe the manufacture of phosphate fertilizers.
  - c) Write a note on blue green algae as biofertilizers.
  - d) Write the effect of modern agro technology and effect of pesticides on soil.
- Q.4 Answer the following. (Any two) 12**
- a) Write classification of pesticides based on chemical nature and types of target.
  - b) Write a note on acidic and alkaline soil. Describe reclamation of acidic and alkaline soil
  - c) Describe in brief nitrogenous fertilizers.
- Q.5 Answer the following. (Any two) 12**
- a) Describe in brief vermicompost and vermiwash.
  - b) What is phosphatic fertilizer and write the classification of phosphatic fertilizers.
  - c) Describe the process of soil formation.



- Q.2 Answer the following (Any Six) 12**
- a) Tricho card used for controlling which pest.
  - b) What is the scientific name of Cyst forming nematode?
  - c) Write down scientific name of Mango stem borer.
  - d) Where termite lives?
  - e) Which Sucking pest secretes sticky secretion on their host plant?
  - f) Write note on applied entomology.
  - g) Enlist different pest and their host in your area.
  - h) Describe production of NPV.
- Q.3 Answer the following (Any Three) 12**
- a) Explain Aphid.
  - b) Control measures on Termite.
  - c) Damages caused by Grasshopper.
  - d) Explain parasites and predators.
- Q.4 Answer the following (Any Two) 12**
- a) Describe the life cycle pattern of red hairy caterpillar.
  - b) Explain Snail as molluscan pest.
  - c) Importance of sericulture.
- Q.5 Answer the following (Any Two) 12**
- a) Describe the life cycle pattern of White ants.
  - b) Describe termite as a social insect.
  - c) What is apiculture? Describe various components of apiculture.



- Q.2 Answer the following. (Any Six) 12**
- a) Write the definition of weed.
  - b) Write the Casual organism of leaf curl of chili.
  - c) Defined epidemiology on plant disease.
  - d) Write the symptoms of Banana leaf spot.
  - e) Advantages of weed.
  - f) Write the control method of leaf spot.
  - g) Enlist the All fungal diseases in our syllabus.
  - h) Defined the plant Disease.
- Q.3 Answer the following. (Any Three) 12**
- a) Define the weed write classification of weed.
  - b) Explain the concept of plant disease.
  - c) Write Koch's postulates.
  - d) Advantages of weed.
- Q.4 Answer the following. (Any Two) 12**
- a) Enlist the types of fungal diseases write the common symptoms on fungal disease.
  - b) Write the causal organism, symptoms and control method of yellow vein mosaic of beans.
  - c) Enlist method of weed control write brief cultural method.
- Q.5 Answer the following. (Any Two) 12**
- a) Write the Common symptoms and control method of viral diseases
  - b) Explain the factors affecting of epidemic development.
  - c) Write the causal organism, symptoms and control method of Red rot of sugarcane

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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Research Methodology (2301103)**

Day & Date: Thursday, 11-01-2024

Max. Marks: 60

Time: 03:00 PM To 05:30 PM

**Instructions:** 1) All questions are compulsory.  
2) Figures to the right indicate full marks.

**Q.1 A) Choose correct alternative.**

**08**

- 1) The main concept behind doing research is to \_\_\_\_\_.
  - a) Study and explore knowledge.
  - b) Start with predefined and clear-cut objectives
  - c) Get new ideas.
  - d) Define clear objectives.
- 2) In order to begin research, one must \_\_\_\_\_.
  - a) Start with a number of clear goals.
  - b) Start with a number of predefined objectives.
  - c) Have a well-defined research method.
  - d) Solve the research problem.
- 3) Doing research requires drafting a working outline.
  - a) Having a pre-defined and clear-cut objectives.
  - b) Planning to get answer for what, why & where type of question.
  - c) Having clear idea about research problem.
  - d) Have a well-defined research method.
- 4) Research objectives fall into a number of categories that include \_\_\_\_\_.
  - a) Planning to get answer for what, why & where type of question.
  - b) Considering the logic behind the method we use in the content of research.
  - c) Formulation, concept, and planning for research method.
  - d) Exploratory, descriptive, diagnostic, and experimental research.
- 5) Formulative research studies in a category of research that aims to \_\_\_\_\_.
  - a) Achieve new insights of a concept.
  - b) Analyze characteristics of something.
  - c) Determine the frequency with which something occurs.
  - d) Test the relationship between variables.





**Q.5 Answer the following. (Any Two)**

- a) Describe types of research design.
- b) Write the use of computer-based equipment for pesticide analysis.
- c) Describe working of potentiometry.

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**M.Sc. (Semester-I) (Old) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Chemistry of Pesticides and Their Formulations – I (MSC26101)**

Day & Date: Friday, 05-01-2024  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Question no. 1 and 2 are compulsory.  
 2) Attempt any three questions from Q. No. 3 to Q. No. 7.  
 3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternatives. (MCQ)****10**

- 1) Among the tertiary butyl halides, \_\_\_\_\_ is better leaving group.
  - a) Fluoride
  - b) Chloride
  - c) Bromide
  - d) Iodide
- 2) Highest antioxidant property of neem extract is found in \_\_\_\_\_ solvent.
  - a) Water
  - b) Alcohol
  - c) Hexane
  - d) Ether
- 3) Quinalphos contains \_\_\_\_\_ ring in its structure.
  - a) Quinoxaline
  - b) Pyridine
  - c) Quinoline
  - d) Quinolone
- 4) While spraying \_\_\_\_\_ pesticides, constant agitation is required.
  - a) E.C
  - b) W. P
  - c) S. P
  - d) S. L
- 5) Acid catalysed dehydration of alcohols gives alkene. This reaction follows \_\_\_\_\_ mechanism.
  - a) E2
  - b) E1
  - c) E1cb
  - d) E2cb
- 6) Reformatsky reaction involves formation of \_\_\_\_\_ compound as Intermediate.
  - a) Organomagnesium
  - b) Carbene
  - c) Free radical
  - d) Organozinc
- 7) Structure of \_\_\_\_\_ pyrethroid does not contains cyclopropyl ring.
  - a) Fenvalerate
  - b) Cypermethrin
  - c) Deltamethrin
  - d) Permethrin
- 8) 2-Butene on reaction with HBr gives \_\_\_\_\_ product.
  - a) 3-Butene
  - b) 3- Bromobutane
  - c) 2-Bromobutane
  - d) 2-Chlorobutane
- 9) Honey bees produces certain smell, when they are attacked by a predator, called \_\_\_\_\_ pheromone.
  - a) Trail
  - b) Sex
  - c) Alarm
  - d) Epideictic
- 10) Anticoagulants are rat poisons, kills rat due to hemorrhage, this is due to inability to produce \_\_\_\_\_.
  - a) Vit. A
  - b) Vit. B
  - c) Vit. C
  - d) Vit. K

- B) Fill in the blanks.** **06**
- 1) Neem oil inhibits ecdysone formation in insects, which is responsible for — process in insects.
  - 2) Formation of Cinnamic acid on reaction of Benzaldehyde, Diethyl malonate and Pyridine is example of — reaction.
  - 3) \_\_\_\_\_ fumigant is used as a grain preservative.
  - 4) Monocrotophos shows insecticidal and \_\_\_\_\_ property.
  - 5) Two atoms of Bromine are present in structure of \_\_\_\_\_ pyrethroid.
  - 6) Lactone intermediate formation takes place in \_\_\_\_\_ reaction.

**Q.2 Answer the following** **16**

- a) Discuss granules in detail advantages and disadvantages of E. C formulation.
- b) Write a note on. Friedel crafts acylation reaction.
- c) Explain mode of action of Organochlorine and Carbamate pesticides.
- d) Give synthesis and uses of Fenvalerate.

**Q.3 Answer the following.**

- a) Give synthesis, properties and uses of Chlorpyrifos. **08**
- b) What are different neem based products. Discuss insecticidal property. **08**

**Q.4 Answer the following.**

- a) Write Pinacol to Pinacolone rearrangement reaction with mechanism. **08**
- b) How methods like baits, lures, attractants and repellents are used for insect control in agriculture. **08**

**Q.5 Answer the following.**

- a) What is mean by adjuvants? Write different adjuvants in detail. **08**
- b) What is addition reaction? Write addition of H<sub>2</sub> and HBr to alkene. **08**

**Q.6 Answer the following.**

- a) Write Benzoin condensation reaction with mechanism. **08**
- b) Write SN<sup>2</sup> reaction with respect to example, mechanism, stereochemistry and energy profile diagram. **08**

**Q.7 Answer the following.**

- a) Write Nitration, Sulphonation and Halogenation reactions of Benzene. **08**
- b) Write the synthesis, environmental fate and uses of Phorate. **08**



- B) Fill in the blanks** **06**
- 1) Interveinal chlorosis occurred due to \_\_\_\_\_
  - 2) \_\_\_\_\_ is an example of bulky organic manure.
  - 3) Cow pea (*Vigna cajana*) is an example of \_\_\_\_\_
  - 4) Biogas is composed of \_\_\_\_\_
  - 5) Bangalore method of composting was developed by \_\_\_\_\_
  - 6) Coconut milk contains \_\_\_\_\_ growth hormone.
- Q.2 Answer the following.** **16**
- a) Classification of fertilizers.
  - b) Bangalore method of composting.
  - c) Liquid manure.
  - d) Role of Mn and Mo.
- Q.3 Answer the following.** **16**
- a) What are biofertilizers? Describe the manufacture of Ammonium molybdate.
  - b) Write a note on specifications of grades of ammonium Phosphate.
- Q.4 Answer the following.** **16**
- a) Describe the structure of soil.
  - b) Describe in brief chemical properties of soil.
- Q.5 Answer the following.** **16**
- a) What are phytohormones? Describe the practical applications of GAA
  - b) Write in brief - role of ethelene.
- Q.6 Answer the following.** **16**
- a) Write a short note on Blue green algae as a Biofertilizer.
  - b) Explain Role of micronutrients.
- Q.7 Answer the following.** **16**
- a) Write a note on Manufacture of Micronutrients.
  - b) Describe in brief 'Production and marketing of Biofertilizers of NAFED



**B) Fill in the blanks.**

06

- 1) \_\_\_\_\_ eyes are present in cockroach.
- 2) \_\_\_\_\_ honey bee is called as little bee.
- 3) Scientific name of mango stem borer is \_\_\_\_\_.
- 4) White grub beetle belongs to order \_\_\_\_\_.
- 5) Chalk brood disease is fungal disease found in the \_\_\_\_\_.
- 6) \_\_\_\_\_ type of life cycle is present in the grasshopper.

**Q.2 Answer the following.**

16

- a) Give the general description of the insect Abdomen.
- b) Write the note on insect predator.
- c) Describe the types of honey bee.
- d) Give the general life cycle pattern of jowar stem borer.

**Q.3 Answer the following.**

16

- a) Define Apiculture. Give the life cycle of honey bee.
- b) Explain the general life cycle pattern of the aphid and its control measure.

**Q.4 Answer the following.**

16

- a) Draw the neat labeled diagram of bee box and describe it.
- b) Describe the life cycle pattern of Termite and write its nature of damage and control measure.

**Q.5 Answer the following.**

16

- a) Describe the digestive system of cockroach with neat labeled diagram.
- b) Define Sericulture and describe mulberry cultivation.

**Q.6 Answer the following.**

16

- a) Write a disease caused in honey bee with control measure.
- b) Describe the biting and chewing type of mouth part with labeled diagram.

**Q.7 Answer the following.**

16

- a) What is nuptial flight in honey bee? Give food and medicinal value of honey with its chemical composition.
- b) Describe the female reproductive system in cockroach with neat labeled diagram.





- B) Fill in the blanks.** **06**
- 1) Fungi, which can grow on living host plant, are called \_\_\_\_\_ parasite.
  - 2) The fungi *Pseudocercospora musicola* cause the \_\_\_\_\_ disease in banana crop.
  - 3) Crown gall of grapes caused by \_\_\_\_\_ spp.
  - 4) Plant pathology is also known as \_\_\_\_\_.
  - 5) Little leaf of brinjal is caused by \_\_\_\_\_.
  - 6) The disease occurring throughout the continent or sub-continent is known as \_\_\_\_\_.
- Q.2 Answer the following.** **16**
- a) Write a short note on Koch Postulates.
  - b) Explain Red rot of Sugarcane with respect to causal organism, symptoms, disease cycle, and control measures.
  - c) Explain the general characters of bacteria.
  - d) Write a note on plant quarantine.
- Q.3 Answer the following.** **16**
- a) Define Plant disease. Write a note on stages of plant disease development.
  - b) Define Epidemiology. Explain the slow and rapid epiphytotic.
- Q.4 Answer the following.** **16**
- a) Explain the following viral disease of plant with respect to causal organism, symptoms and control measures.
    - i) Leaf curl of Chillies
    - ii) Tobacco mosaic virus
  - b) Explain the following disease of plant with respect to causal organism, symptoms and control measures.
    - i) Sandle spike
    - ii) Little Leaf Brinjal
- Q.5 Answer the following.** **16**
- a) Explain the following disease of plant with respect to causal organism, symptoms and control measures.
    - i) Wilt of Banana
    - ii) Bacterial blight of Bean
  - b) Explain the following disease of plant with respect to causal organism, symptoms and control measures.
    - i) Banana leaf spot
    - ii) Ergot of Bajara
- Q.6 Answer the following.** **16**
- a) Write a detail note on concept of plant disease.
  - b) Explain the following disease of plant with respect to causal organism, symptoms and control measures.
    - i) Grassy shoot disease of Sugarcane
    - ii) Yellow vein mosaic of Bean.
- Q.7 Answer the following.** **16**
- a) Define weed. Explain in detail the classification of weeds.
  - b) Enlist the methods of weed control. Explain chemical & biological methods of weed control.

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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Chemistry of pesticides and their formulations - II (MSC26201)**

Day & Date: Monday, 18-12-2023  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. No. 1 and 2 are compulsory.  
 2) Attempt any Three questions from Q.No.3 to Q.No.7.  
 3) Figures to the right indicate full marks.

**Q.1 A) Choose the correct alternative and rewrite the sentence. 10**

- 1) Synthesis of carbofuran involves \_\_\_\_\_ rearrangement reaction.
  - a) Fries
  - b) Cope
  - c) Diel's Alder
  - d) Claisen
- 2) Sodium chlorate is \_\_\_\_\_.
  - a) Selective herbicide
  - b) Non selective herbicide
  - c) Insecticide
  - d) Fungicide
- 3) Thallium sulphate is used as \_\_\_\_\_.
  - a) Miticide
  - b) Avicide
  - c) Ovicide
  - d) Rodenticide
- 4) The compound exhibiting pesticidal property in gaseous state is called \_\_\_\_\_.
  - a) Aerosole
  - b) Dust
  - c) Fumigant
  - d) Granules
- 5) Which isomer of hexachlorocyclohexane is having highest insecticidal activity?
  - a)  $\alpha$
  - b)  $\beta$
  - c)  $\gamma$
  - d)  $\delta$
- 6) Fungicidal property of Bordeaux mixture is increased by adding \_\_\_\_\_ to it.
  - a) Sugar
  - b) Salt
  - c) Insecticide
  - d) Jaggery
- 7) Carbofuran has trade name \_\_\_\_\_.
  - a) Furadan
  - b) Sevin
  - c) Gamaxone
  - d) Z-78
- 8) Nitronaphthalene containing halogen atom in its structure acts as \_\_\_\_\_.
  - a) Fungicide
  - b) Bactericide
  - c) Insecticide
  - d) Herbicide

## SLR-EA-11

- 9) \_\_\_\_\_ SO<sub>2</sub> groups are present in tetradifon.  
a) One    b) Two  
c) Three    d) Four
- 10) Phenyl dialkyl ureas are used as \_\_\_\_\_.  
a) Insecticide                                        b) Fungicide  
c) Bactericide                                        d) Herbicide

**B) Fill in the blanks.** **06**

- 1) Tin compounds are generally used as \_\_\_\_\_.
- 2) Hydrazine compounds used as pesticides which contain \_\_\_\_\_ functional group.
- 3) Phenyl thiocyanate acts as \_\_\_\_\_ in crops.
- 4) Carbamates contain \_\_\_\_\_ functional group.
- 5) Nitralin is used in agriculture as \_\_\_\_\_.
- 6) \_\_\_\_\_ is used to treat potato tubers to protect them from decay during germination.

**Q.2 Answer the following.** **16**

- a) Write uses of nitro compounds as pesticide.
- b) Write a note on carbamate pesticides.
- c) Write synthesis of carbofuran.
- d) Write applications of acetamiprid.

**Q.3 Answer the following.** **16**

- a) Describe the structure activity relationship of carbamates with reference to acetyl coline.
- b) Write applications of thiocyanates.

**Q.4 Answer the following.** **16**

- a) Explain synthesis, properties and uses of propoxure.
- b) Write synthesis, properties and uses of lindane.

**Q.5 Answer the following.** **16**

- a) Explain synthesis and uses of butachlor.
- b) Write synthesis and uses of diethyl toluamide.

**Q.6 Answer the following.** **16**

- a) Write properties and uses of hydrogen cyanide and carbondisulphide.
- b) Explain uses of computer based equipments for pesticide analysis.

**Q.7 Answer the following.** **16**

- a) Write properties and uses of zinc oxide and zinc phosphide.
- b) Describe use of computer in pesticide development and formulation development.

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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**Agrochemicals and Pest Management**  
**Analytical Techniques for Agrochemicals (MSC26202)**

Day &amp; Date: Tuesday, 19-12-2023

Max. Marks: 80

Time: 11:00 AM To 02:00 PM

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.  
 2) Attempt any Three questions from Q.No.3 to Q.No.7.  
 3) Figures to the right indicate full marks.

**Q.1 A) Choose the correct alternative. (MCQ) 10**

- 1) \_\_\_\_\_ electrode is the reference electrode.
  - a) Hydrogen
  - b) Platinum
  - c) Quinhydrone
  - d) Glass
- 2) All chromatographic techniques are based on the principle of \_\_\_\_\_.
  - a) Precipitation
  - b) Solvation
  - c) Electrolysis
  - d) Separation
- 3) The color change property of an acid base indicator depend on \_\_\_\_\_.
  - a) Structural arrangement
  - b) Ionization of indicator
  - c) P<sup>H</sup> of solution
  - d) All of these
- 4) Resistance of solution is measured with the help of \_\_\_\_\_.
  - a) Potentiometric bridge
  - b) Potentiometer
  - c) Wheatstone bridge
  - d) None of these
- 5) Methyl red is \_\_\_\_\_ in acid solution.
  - a) Red
  - b) Yellow
  - c) Orange
  - d) Pink
- 6) The process of extracting small portion from large quantity of material representing its true components.
  - a) Extracting
  - b) Sampling
  - c) Quantitative analysis
  - d) Qualitative analysis
- 7) SI unit of conductance is \_\_\_\_\_.
  - a) Siemen
  - b) Ohm
  - c) Mho
  - d) None of these
- 8) The P<sup>H</sup> range of color change of phenolphthalein indicator is \_\_\_\_\_.
  - a) 7-10
  - b) 4-7
  - c) 8.3-10
  - d) 7.3-9.5
- 9) The hottest flame in O<sub>2</sub> is produced by \_\_\_\_\_.
  - a) Acetylene
  - b) Butane
  - c) Cyanogen
  - d) Hydrogen
- 10) Thin layer chromatography is \_\_\_\_\_ chromatography.
  - a) Partition
  - b) Adsorption
  - c) Electrical mobility
  - d) None of these

- B) Fill in the blanks.** **06**
- 1) A chemical reaction between a titrant and titrand is called as \_\_\_\_\_.
  - 2) Erichrome black T also known as \_\_\_\_\_.
  - 3) Silica gel is \_\_\_\_\_ phase in TLC.
  - 4) Titration in which end point are determined by emf measurement are called \_\_\_\_\_.
  - 5) Quinhydrone is \_\_\_\_\_ mixture of quinone and hydroquinone.
  - 6) In simple flame photometers the monochromator is \_\_\_\_\_.
- Q.2 Answer the following.** **16**
- a) Write note on specific and equivalence conductance.
  - b) Write applications of atomic absorption spectroscopy.
  - c) Write applications of turbidimetry.
  - d) Describe gravimetric estimation of Fe.
- Q.3 Answer the following.** **16**
- a) What are acid base titrations? Explain their types with suitable example.
  - b) What is Paper chromatography? Explain various types of development of paper chromatography.
- Q.4 Answer the followings.** **16**
- a) Describe principle, working and applications of Thin layer chromatography.
  - b) What are complexometric titrations? Describe metallochromic indicators.
- Q.5 Answer the followings.** **16**
- a) Draw the circuit diagram of P<sup>H</sup> meter and explain its working.
  - b) Describe principle and application of Nephelometer.
- Q.6 Answer the followings.** **16**
- a) What is chromatography? Write classification of chromatography with principle of each class.
  - b) Write note on stripping voltametry. Give applications of voltametry in trace analysis.
- Q.7 Answer the followings.** **16**
- a) Write principle and working of flame photometer.
  - b) Describe principle and application of polarimeter in optical active pesticide.

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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Economic Entomology (MSC26206)**

Day & Date: Wednesday, 20-12-2023  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Question 1 and 2 are compulsory.  
 2) Attempt any Three questions from Q. No. 3 to Q. No. 7.  
 3) Figure to the right indicate full marks.

**Q.1 A) Choose the correct alternative.**

**10**

- 1) \_\_\_\_\_ is household pets.
  - a) Thrips
  - b) Nematode
  - c) Bed bug
  - d) Mite
- 2) Cockroach has \_\_\_\_\_ type of mouthpart.
  - a) Sucking
  - b) Biting and chewing
  - c) Siphoning
  - d) Sponging
- 3) House sparrow belongs to phylum \_\_\_\_\_.
  - a) vertebrate
  - b) arthropoda
  - c) nematohelminthes
  - d) platyhelminthes
- 4) Life cycle of sucking cattle louse completes by \_\_\_\_\_ stages.
  - a) Egg-larva-pupa-adult
  - b) Egg-nymph-pupa-adult
  - c) Egg-nymph-adult
  - d) Nymph-adult
- 5) \_\_\_\_\_ is polyphagous pest.
  - a) *Spodoptera species*
  - b) Leaf minor
  - c) Leaf caterpillar
  - d) Silver fish
- 6) White grub completes \_\_\_\_\_ generation in year.
  - a) One
  - b) Two
  - c) Three
  - d) Four
- 7) Most damaging stage of nematode is \_\_\_\_\_.
  - a) first
  - b) third
  - c) fourth
  - d) second
- 8) \_\_\_\_\_ is the pest of livestock.
  - a) Rice weevil
  - b) Black fly
  - c) Nematode
  - d) Pulse beetle
- 9) *Limax spp.* is \_\_\_\_\_ pest of agricultural crop.
  - a) vertebrate
  - b) insect
  - c) molluscan
  - d) nematode
- 10) \_\_\_\_\_ is polyhouse pest.
  - a) Khapara beetle
  - b) Cut worm
  - c) Rat
  - d) Bed bug

- B) Fill in the blanks.** **06**
- 1) Malaria caused by \_\_\_\_\_ species of mosquito.
  - 2) Scientific name of Aphid is \_\_\_\_\_.
  - 3) Chemicals used to control nematode are known as \_\_\_\_\_.
  - 4) \_\_\_\_\_ is the order of Rat.
  - 5) \_\_\_\_\_ is branch of science dealing with the scientific study of insects.
  - 6) Male *Anopheles* mosquito sucks the \_\_\_\_\_.
- Q.2 Answer the following.** **16**
- a) Control measures of mosquitoes.
  - b) Write a note on House hold pest.
  - c) Describe damages caused by hairy caterpillar
  - d) Control measures of Rat.
- Q.3 Answer the following.** **16**
- a) Describe life cycle pattern of nematode and write its damage caused in agriculture crop.
  - b) Describe life cycle pattern of cockroach its damage caused in agriculture crop.
- Q.4 Answer the following.** **16**
- a) Write a nature of damage, control measure and life cycle of termites.
  - b) What are vertebrate pest? Explain nature of damage of monkey.
- Q.5 Answer the following.** **16**
- a) Write a note on polyhouse pest and give its nature of damage and control measure.
  - b) Explain slug as a molluscan pest of agricultural crops.
- Q.6 Answer the following.** **16**
- a) Explain different species of Rodent.
  - b) Describe the life cycle pattern of Cotton white fly and write its control measures.
- Q.7 Answer the following.** **16**
- a) Describe damages caused by cut worms and grasshopper.
  - b) Write a note on Indian field mouse and give its nature of damage and control measure.

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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Pesticides Residues and Toxicology (MSC26301)**

Day & Date: Friday, 05-01-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. No. 1 and 2 are compulsory.  
 2) Attempt any Three questions from Q.No.3 to Q.No.7.  
 3) Figures to the right indicate full marks.

**Q.1 A) Multiple choice question.**

**10**

- 1) \_\_\_\_\_ is cardiac poison.
 

a) Hcl	b) opium
c) Alcohol	d) Prussic acid
- 2) Chlorine gas leaked in environment is environmental \_\_\_\_\_.
 

a) pollutant	b) poison
c) contaminant	d) mutagen
- 3) \_\_\_\_\_ toxicology is used to detection of cause of mortality.
 

a) environmental	b) forensic
c) wildlife	d) clinical
- 4) The chemical which causes cancer is known as \_\_\_\_\_.
 

a) poison	b) cardiac
c) toxicant	d) mutagenic
- 5) \_\_\_\_\_ poison affects on the nervous system of man.
 

a) corrosive	b) Irritants
c) Neurotics	d) cardiac
- 6) The research institute of toxicology is established in \_\_\_\_\_.
 

a) Mumbai	b) Pune
c) Delhi	d) Lucknow
- 7) The process of tumour formation is known as \_\_\_\_\_.
 

a) Neoplasia	b) hyperplasia
c) metaplasia	d) Anaplasia
- 8) The deep sleep and coma is produced by \_\_\_\_\_ in human beings.
 

a) narcotics	b) spasmodic
c) irritants	d) cardiac poison





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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Advances in Pest Control – I (MSC26302)**

Day & Date: Sunday, 07-01-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Question no. 1 and 2 are compulsory.  
 2) Attempt any three questions from Q. No 3 to Q. No 7.  
 3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternatives from the given options. 10**

- 1) Sandwich method is the known amount of insecticide is put between \_\_\_\_\_ of the batch of insect.
  - a) two leaves
  - b) two insect
  - c) two crop
  - d) two flower
- 2) Bioassay is the measurement of the potency of any stimulus which may be \_\_\_\_\_.
  - a) Chemical
  - b) physical
  - c) Biological
  - d) all of the above.
- 3) The Photo migration method of bioassay is performed by using \_\_\_\_\_ response of insect larvae.
  - a) Phototaxic
  - b) Dry Film
  - c) Photo reflection
  - d) Photo merge
- 4) Antibiosis refers to the adverse effect of the host plant on the \_\_\_\_\_ of insect.
  - a) Oviposition
  - b) biology
  - c) mating
  - d) tolerance
- 5) HPR Stands for \_\_\_\_\_.
  - a) House Pest Resistance
  - b) Host Plan Resistance
  - c) Host Plant Resistance
  - d) Host Plant Resisance
- 6) Trail pheromone released by insect for \_\_\_\_\_ purpose.
  - a) mating
  - b) protection
  - c) feeding
  - d) none of the above
- 7) Neem leaves is the example of \_\_\_\_\_.
  - a) attractants
  - b) repellent
  - c) chemo sterilant
  - d) pheromones
- 8) Which of the following is not true about hydroponics?
  - a) Requires high investment
  - b) Technical knowledge required
  - c) Can be misused to cultivate banned crops
  - d) Plants through hydroponics cannot be cultivated everywhere



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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Diseases of Crop Plants – I (MSC26307)**

Day & Date: Tuesday, 09-01-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Question 1 and 2 are compulsory.  
 2) Attempt any Three from Q.3 to Q.7.  
 3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternatives from the given options. 10**

- 1) Ustilago scitciminea caused due to \_\_\_\_\_ disease of sugarcane.
  - a) Fruit rot
  - b) GSD
  - c) Leaf rust
  - d) Smut
- 2) Downy Mildew caused due to fungus \_\_\_\_\_.
  - a) *Fusarium oxysporium*
  - b) *Peronosclerospora sorghi*
  - c) *Alternaria solani*
  - d) *Alternaria alternata*
- 3) Phamoploeospora indica disease control \_\_\_\_\_.
  - a) Fungicide
  - b) Monocrotophos
  - c) Insecticide
  - d) a & b
- 4) Rust of sorghum caused due to fungus \_\_\_\_\_.
  - a) *Gleosporium ampelfagum*
  - b) *Colletotrichum falcatum*
  - c) *Puccinia purpurea*
  - d) *Diplodia natalensis*
- 5) Sphacelotheca cruenta caused due to \_\_\_\_\_ of Sorghum.
  - a) Loose smut-
  - b) leaf spot
  - c) *Colletotrichum gloeosporioides*
  - d) Powdery mildew
- 6) Black or stem rust is diseases of \_\_\_\_\_ crop.
  - a) Sorghum
  - b) Wheat
  - c) Maize
  - d) Sugarcane
- 7) Seed treatment control \_\_\_\_\_ disease.
  - a) Leaf
  - b) Blight
  - c) Leaf spot
  - d) soil bom
- 8) Spray mancozeb is \_\_\_\_\_ method of disease control.
  - a) Chemical
  - b) Physical
  - c) *Biological*
  - d) None of above
- 9) Head smut coused due to \_\_\_\_\_ diseases.
  - a) *Fusarium oxysporium*
  - b) *Colletrichum gloeosorioides*
  - c) *Sphacelotheca reiliana*
  - d) White rust
- 10) Use disease resistance varieties to control \_\_\_\_\_ infection.
  - a) Leaf
  - b) Primary and secondary
  - c) Fruit
  - d) Primary infection

**B) Fill in the blanks.****06**

- 1) Bavistin is \_\_\_\_\_ type of fungicide.
- 2) Disease free planting material is \_\_\_\_\_ method of disease control.
- 3) Fungicides are used for soil are control \_\_\_\_\_ disease.
- 4) White rust caused due to \_\_\_\_\_.
- 5) Udbatta disease are observed on \_\_\_\_\_ crop.
- 6) Wind flow and Rain flash are \_\_\_\_\_ infection.

**Q.2 Answer the following.****16**

- a) Write the symptoms and control method of Ergot on bajra.
- b) Explain Leaf spot of castor.
- c) Write the disease cycle and control wilt on Gram.
- d) common control method of fungal diseases.

**Q.3 Answer the following.****16**

- a) Write the causal organism, symptoms and management collar rot of Groundnut.
- b) Explain the Rust and grain smut of wheat.

**Q.4 Answer the following.****16**

- a) Enlist the diseases of sugarcane explain in detail smut.
- b) Write the general symptoms. Infection and control of Wilt.

**Q.5 Answer the following.****16**

- a) Write the diseases of sorghum details rust on sorghum.
- b) Write the diseases of sunflower Explain in detail powdery mildew.

**Q.6 Answer the following.****16**

- a) Write the common symptoms, disease cycle of fungal disease.
- b) Enlist the diseases of Tobacco write details Black shank.

**Q.7 Answer the following.****16**

- a) Explain the Rust and wilt disease of peas.
- b) Write the diseases soybean of explain Anthracnose disease.

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**M.Sc. (Semester - IV) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Agro-Based Marketing Management (MSC26401)**

Day & Date: Monday, 18-12-2023  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.  
 2) Attempt any three questions from Q. No. 3 to Q. No. 7.  
 3) Figure to right indicate full marks.

**Q.1 A) Choose the correct answer from options given below: 10**

- 1) Product installation service is an example of \_\_\_\_\_.  
 a) after sales service                      b) impersonal selling  
 c) indirect selling                              d) direct selling
- 2) \_\_\_\_\_ goods are purchased by a person after proper planning & thinking.  
 a) Specially                                      b) Shopping  
 c) Convenience                                d) Luxury
- 3) Dividing the total market in to different small parts is known as market \_\_\_\_\_.  
 a) research                                      b) analysis  
 c) segmentation                                d) differentiation
- 4) \_\_\_\_\_ is a delivery of standard of living to the societies.  
 a) Marketing                                    b) Production  
 c) Consumption                                d) Purchasing power
- 5) Generally the price of specially goods are \_\_\_\_\_.  
 a) low    b) high  
 c) medium                                        d) moderate
- 6) \_\_\_\_\_ Problems are/is faced by agro-based marketing.  
 a) Competition                                b) Education  
 c) Govt. Policy                                 d) All of above
- 7) Agro based marketing management used for \_\_\_\_\_.  
 a) social Devel                                b) growth of agro sector  
 c) increase in sales                            d) none of above
- 8) Producer to Consumer \_\_\_\_\_ channel.  
 a) one level                                      b) two level  
 c) three level                                    d) four level
- 9) \_\_\_\_\_ is a part of 4p's.  
 a) Product                                        b) Price  
 c) Promotion                                    d) All of above
- 10) \_\_\_\_\_ is more important in agro marketing.  
 a) Public relation                              b) Sales Promotion  
 c) Publicity                                      d) Corporate image

**B) Fill in the blanks.**

- 1) \_\_\_\_\_ is the systematic objective & search for the study of facts relevant to any problem in the field of Marketing.
- 2) The term \_\_\_\_\_ is generally used with reference to the steps taken externally apart from general advertising for raising the existing level of sales to higher levels.
- 3) Channels of \_\_\_\_\_ is a set of independent organization involved in the process of making a product or services available for use of consumption.
- 4) E-business means use of \_\_\_\_\_ for purchase & sales of goods & services.
- 5) The main aim of regulated markets is \_\_\_\_\_.
- 6) \_\_\_\_\_ is the policy adopted by manufacturers to get success in the field of marketing.

**Q.2 Answer the following.****16**

- a) Nature of marketing.
- b) Types of consumer goods.
- c) Explain marketing planning Process.
- d) Importance of price in 4p's.

**Q.3 Answer the following.****16**

- a) Important of marketing.
- b) Problems of agro base marketing.

**Q.4 Answer the following.****16**

- a) Explain the types of market.
- b) Role of Marketing in agro based business.

**Q.5 Answer the following.****16**

- a) Describe the marketing research procedure.
- b) Factor affecting consumer behavior.

**Q.6 Answer the following.****16**

- a) Explain various stages in product life cycle.
- b) Types of e-business.

**Q.7 Answer the following.****16**

- a) Use of 5 p's for Soni Seeds.
- b) Explain the base of Market Segmentation.





- 10) 'Bt' insecticidal formulations act as \_\_\_\_\_.
- a) Contact poison                      b) Stomach poison  
c) Respiratory poison                d) All the above

**B) Fill in the blanks. 06**

- 1) IPM stands for \_\_\_\_\_.
- 2) \_\_\_\_\_ are the main source of active ingredient of neem.
- 3) Use of fungi, Bacteria and viruses against pest is the example of \_\_\_\_\_ control.
- 4) The full form of "Bt" \_\_\_\_\_.
- 5) Insect having complete life cycle has \_\_\_\_\_ stages.
- 6) Harmonal IGRs work by mimicking or inhibiting \_\_\_\_\_ hormone.

**Q.2 Answer the following. 16**

- a) Write a note on sex pheromones.
- b) Explain in short attractants and repellants.
- c) Chemical method of pest control.
- d) Nucleur Polyhydrosis Virus.

**Q.3 Answer the following. 16**

- a) Describe the importance of biotechnological applications in pest management.
- b) Describe in brief the methodology of genetic engineering to introduce gene into plant so as to produce transgenic plants.

**Q.4 Answer the following. 16**

- a) Define the biological control. Explain the different techniques used in Biological control with suitable example.
- b) Define parasite & predators. Write a note role of parasitoid in insect pest management.

**Q.5 Answer the following. 16**

- a) Describe the importance of IPM in pest management.
- b) Describe in detail insect growth regulators.

**Q.6 Answer the following. 16**

- a) Explain in detail use of Fungus in pest management.
- b) Write a note Light activated pesticides.

**Q.7 Answer the following. 16**

- a) What are the semiochemicals? Discuss the importance of pheromones.
- b) Define Somaclonal variability. Explain Nucleur Polyhydrosis Virus in pest control.

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**M.Sc. (Semester - IV) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Manufacture of Agrochemicals (MSC26403)**

Day & Date: Wednesday, 20-12-2023  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.  
 2) Attempt any three questions from Q. No. 3 to Q. No. 7  
 3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative. 10**

- 1) Solvent extraction involves distribution of solute between two solvents which are \_\_\_\_\_.
  - a) Immiscible
  - b) Miscible
  - c) Partially miscible
  - d) All of these
- 2) Distillation is not used for separation of \_\_\_\_\_.
  - a) Liquid components
  - b) Solid components
  - c) Volatile Components
  - d) Nonvolatile components
- 3) Crystallization is the formation of \_\_\_\_\_ particles within homogeneous liquid phase.
  - a) Liquid
  - b) Solid
  - c) Gas
  - d) Semisolid
- 4) \_\_\_\_\_ cost includes the cost of interaction and testing of goods at various stages of manufacture.
  - a) Optimizing
  - b) Failure
  - c) Prevention
  - d) Appraisal
- 5) During the assessment of the purchase order, the copy of order is sent to the store.
  - a) To make the funds available for purchase of goods
  - b) To confirm that goods arrive in satisfactory condition
  - c) To assure that goods are coming
  - d) All of these
- 6) \_\_\_\_\_ disease is caused due to frequent exposure to pesticides.
  - a) Heart
  - b) Skin
  - c) Kidney
  - d) Stomach
- 7) The ISI mark is mandatory for \_\_\_\_\_.
  - a) Food material
  - b) Portland cement
  - c) Pesticides
  - d) Sanitizer
- 8) Imidacloprid is used as \_\_\_\_\_.
  - a) Herbicide
  - b) Fungicide
  - c) Neonicotinoid insecticide
  - d) Rodenticide



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**M.Sc. (Semester - IV) (New) (CBCS) Examination: Oct/Nov-2023**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Diseases of Crop Plants II (MSC26407)**

Day & Date: Thursday, 21-12-2023  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Question 1 and 2 are compulsory.  
 2) Attempt any Three questions from Q. No. 3 to Q. No. 7.  
 3) Figure to the right indicate full marks.

**Q.1 A) Choose the correct alternatives from the given options. 10**

- 1) The most significant reason why fungi are not in kingdom Plantae is that fungi \_\_\_\_\_.  
 a) are chemoorganotrophic heterotrophs  
 b) are procaryotes  
 c) have unicellular and multi-cellular forms  
 d) are eucaryotes
- 2) Blast of Rice is caused by \_\_\_\_\_.  
 a) Magnaporthe grisea                      b) Drechslera oryzae  
 c) Ephelis oryzae                              d) Rhizoctonia solani
- 3) Late blight of potato can be controlled by spraying \_\_\_\_\_.  
 a) Ridomil MZ                                  b) Dithane Z-78  
 c) Captan    d) Ipridione
- 4) Late blight of Potato is caused by \_\_\_\_\_.  
 a) Alternaria solani  
 b) Phytophthora infestans  
 c) Synchytrium endobioticum  
 d) Septoria lycopersici
- 5) A fungus causing wart of potato is \_\_\_\_\_.  
 a) a saprophyte                                  b) a facultative parasite  
 c) a facultative saprophyte                  d) an obligate
- 6) Stem canker and black scurf of potato is caused by \_\_\_\_\_.  
 a) One fungus  
 b) Two fungi  
 c) One fungus and one bacterium  
 d) none of these
- 7) The activity of Rhizoctonia solani causing stem canker and black scurf of potato can be suppressed by a biocontrol agent \_\_\_\_\_.  
 a) Gliocladium                                  b) Aspergillus  
 c) Trichoderma                                  d) Entomophthora
- 8) Sulphur fungicides are very effective in the control of \_\_\_\_\_.  
 a) Anthracnose disease                      b) Powdery mildews  
 c) Wilts    d) Downy mildews

- 9) Choose the correct statement \_\_\_\_\_.  
 a) Zoospores of chytridiomycetes and hyphochytridiomycetes are uniflagellate but tinsel type in former and whiplash type in later.  
 b) above-mentioned classes have tinsel type flagellum.  
 c) both the classes have whiplash type flagellum.  
 d) All of these
- 10) Seed potato is not transported from Darjeeling area to other parts of the country because of \_\_\_\_\_.  
 a) Domestic quarantine  
 b) High transport cost involved  
 c) It does not perform well in the plains  
 d) All of these

**B) Fill in the blanks OR write True/False.**

06

- 1) In plains of India \_\_\_\_\_ wheat rust appears firstly.  
 2) The downy mildew of Bajra is caused by \_\_\_\_\_.  
 3) A.P.S. stands for \_\_\_\_\_.  
 4) Brown spot of maize is caused by \_\_\_\_\_.  
 5) The major storage fungi that affect the food grain is \_\_\_\_\_.  
 6) Black heart is a physiological disorder of \_\_\_\_\_.

**Q.2 Answer the following.**

16

- a) Write down the symptoms of Blight disease of Tomato.  
 b) Write down the symptoms of Powdery mildew of Bhendi.  
 c) Write down the nature of damage of Leaf spot disease of Chilli.  
 d) Write down the control measures of Anthracnose of mango.

**Q.3 Answer the following.**

16

- a) Write down the symptoms, disease cycle, and nature of damage and control measures of oily spot of pomegranate.  
 b) Write down the symptoms, disease cycle, and nature of damage and control measures of Powdery mildew of *Santalum*.

**Q.4 Answer the following.**

16

- a) Write down the symptoms and disease cycle of:  
 1) Star spot diseases of Bamboo  
 2) Rust of Sisso  
 b) Write down the nature of damage and control measures of:  
 1) Black spot of Roses  
 2) Powdery mildew of Chrysanthemum

**Q.5 Answer the following.**

16

- a) Write down the symptoms, disease cycle, and nature of damage and control measures of Brown rot of Citrus.  
 b) Write down the symptoms, disease cycle, and nature of damage and control measures of Sigatoka of Banana.

**Q.6 Answer the following.**

16

- a) Discuss the symptoms and control measures of:  
 1) Fruit Rot of Guava  
 2) Downey mildew of Grapes  
 b) Discuss the symptoms and control measures of:  
 1) Wilt of Coconut  
 2) Leaf spot of Chickoo

**Q.7 Answer the following.**

- a)** Write down the symptoms, disease cycle, and nature of damage and control measures of Fruit rot of Papaya.
- b)** Write down the symptoms, and nature of damage and control measures of Black root disease of Sugar beet.