

Seat No.	
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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: March/April-2024**  
**Agrochemicals and Pest Management**  
**Chemistry of Pesticides, Soil Science & Fertilizers (2301101)**

Day & Date: Friday, 10-05-2024  
 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) Which of the following is not pesticide?
  - a) Boric acid
  - b) Allethril
  - c) Rozol
  - d) Alprazolam
- 2) The chemical composition of single super phosphate is \_\_\_\_\_.
  - a)  $[3 \text{ Ca} (\text{CH}_2\text{PO}_4)_2 \text{ H}_2\text{O}]$
  - b)  $\text{Ca}_3 (\text{PO}_4)_2$
  - c)  $[\text{Ca} (\text{H}_2\text{PO}_4)_2 \text{ H}_2\text{O}]$
  - d)  $[3\text{Ca} (\text{CH}_2\text{PO}_4)_2 \text{ H}_2\text{O}]$
- 3) Breaking of seed dormancy is made by the treatment of \_\_\_\_\_.
  - a) Auxin
  - b) Gibberellic acid
  - c) Cytokinin
  - d) CCC
- 4) Soil colloid is a part of \_\_\_\_\_.
  - a) sand
  - b) clay
  - c) loam
  - d) humus
- 5) An example of concentrated organic manure is \_\_\_\_\_.
  - a) FYM
  - b) Bone meal
  - c) Oil cake
  - d) Sewage
- 6) Which one of the following is not micronutrient?
  - a) Zn
  - b) Cl
  - c) Mo
  - d) P
- 7) Hydrogen ion concentration is increases in soil, causes \_\_\_\_\_.
  - a) active acidity
  - b) active alkalinity
  - c) salinity
  - d) none of these
- 8) The amount of Nitrogen from ammonia is equal to \_\_\_\_\_.
  - a) 33 %
  - b) 40 %
  - c) 46 %
  - d) 78 %

**B) Fill in the blanks.**

**04**

- 1) \_\_\_\_\_ is the growth retardant.
- 2) Water holding capacity of soil is governed by \_\_\_\_\_.
- 3) Most of the pesticides are permulated in \_\_\_\_\_.
- 4) Bangalore method of composting was developed by \_\_\_\_\_.

- Q.2 Answer the following. (Any Six) 12**
- a) Define pesticides.
  - b) What is Botanical pesticide?
  - c) Enlist types of soil.
  - d) What is nitrogenous fertilizer?
  - e) Define micronutrients.
  - f) Write applications of cytokinins.
  - g) What are biofertilizers?
  - h) Write a note on green manure.
- Q.3 Answer the following. (Any Three) 12**
- a) Write a note on Bangalore method of composting.
  - b) Classification of fertilizers.
  - c) Write a short note on soil fertility.
  - d) Write a short note on liquid manure.
- Q.4 Answer the following. (Any Two) 12**
- a) What is soil? Describe the structure of Soil.
  - b) Explain Role of micronutrients.
  - c) Write a short note on Blue green algae as a Biofertilizer.
- Q.5 Answer the following. (Any Two) 12**
- a) Write in brief about manufacture of urea.
  - b) What is Gibberellic acid? Write the practical applications of GA.
  - c) Explain in brief concept of vermicompost.

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**M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Introductory and Industrial Entomology (2301102)**

Day & Date: Monday, 13-05-2024  
 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 alternatives. (MCQ) 08**

- 1) Cockroach belongs to phylum \_\_\_\_\_.  
 a) Echinodermata                      b) Mollusca  
 c) Arthropoda                            d) Brachiopod
- 2) External study of insect is called as \_\_\_\_\_.  
 a) Ecology                                b) Anatomy  
 c) Physiology                              d) None of above
- 3) \_\_\_\_\_metamorphosis is present in white grub.  
 a) Complete                                b) Incomplete  
 c) Disturbed                                d) Merged
- 4) Scientific name of rock bee is \_\_\_\_\_.  
 a) Apis mellifera                        b) Apis dorsata  
 c) Apis florea                                d) None of above
- 5) Complete metamorphosis is found in \_\_\_\_\_.  
 a) White grub                                b) Grasshopper  
 c) Aphid                                        d) Nematode
- 6) Termite belongs to the family \_\_\_\_\_.  
 a) Coleopteran                              b) Rodentia  
 c) Diptera                                      d) Termitidae
- 7) NPV is used against \_\_\_\_\_ pest.  
 a) Lepidopteran                            b) Coleoptera  
 c) Dipteran                                    d) Thysenoptera
- 8) Forgut of insects is called as \_\_\_\_\_.  
 a) Malphigian tubules                    b) Ovary  
 c) Stomodeum                                d) Testes

**B) Fill in the blanks. 04**

- 1) Cultivation of mulberry plant for the rearing of silk worm is called \_\_\_\_\_.
- 2) Royal jelly is food of \_\_\_\_\_ honey bee.
- 3) \_\_\_\_\_ types of mouth parts found in Cockroach.
- 4) Trichogramma is act as a \_\_\_\_\_ on pest.

- Q.2 Answer the following Question. (Any Six) 12**
- a) Define entomology. Enlist the example of Agriculture pests.
  - b) Write uses of honey.
  - c) What is function of the crop in alimentary canal of cockroach?
  - d) Write the scientific name of Red hairy Caterpillar and write nature of damage.
  - e) Give the taxonomic classification of Grasshopper.
  - f) Enlist the insect having Industrial importance.
  - g) Draw the labelled diagram of insect leg.
  - h) Write the full form of NPV and write uses of it.
- Q.3 Answer the following Question. (Any Three) 12**
- a) Write the control measures and nature of damage caused by Rat.
  - b) Write a note on parasites.
  - c) Describe the sponging type of mouth parts.
  - d) Describe the life cycle of Nematodes.
- Q.4 Answer the following Question. (Any Two) 12**
- a) Describe the Biting and chewing type of mouth parts in Insect.
  - b) Describe the Nervous system of cockroach with neat labelled diagram.
  - c) Describe the general life cycle pattern of Mango stem borer give its nature of damage and control measure.
- Q.5 Answer the following Question. (Any Two) 12**
- a) Explain in detail reproductive system of cockroach with diagram.
  - b) Describe the general life cycle pattern of white grub give its nature of damage and control measure.
  - c) Enlist the types of honey bee. Describe the colony organization of honey bee.



- Q.2 Answer the following. (Any Six) 12**
- a) Write the symptoms of the little leaf of Brinjal.
  - b) Write the classification of weed based on Life Span.
  - c) Define plant disease.
  - d) Write Any two fungal diseases with its causal organism.
  - e) Advantage of biological method of weed control.
  - f) Define plant Epidemiology.
  - g) Write any four Advantages of weed.
  - h) Any two characters of Bacteria.
- Q.3 Answer the following. (Any Three) 12**
- a) Write the symptoms and control papaya ring spot.
  - b) Explain the Types of plant disease.
  - c) Define the weed writes classification of weed.
  - d) Write the Causal organisms and control method of leaf curl.
- 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 Ergot of Bajra.
  - c) Explain the Koch's postulates.
- Q.5 Answer the following. (Any Two) 12**
- a) Write the symptoms and control method of viral diseases.
  - b) Explain the factors affecting of epidemic.
  - c) Write the causal organism, symptoms and control method of Ring spot of papaya.

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**M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2024**  
**Agrochemicals and Pest Management**  
**Research Methodology (2301103)**

Day & Date: Friday, 17-05-2024  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 60

- 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 alternative. (MCQ)**

**08**

- 1) 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.
- 2) Research is considered to be more than just a way of skills, it is \_\_\_\_\_.
  - a) Planning to what, why& where type of question.
  - b) A way of critical thinking about professional aspects of relate to your work.
  - c) The research methods used within research methodology.
  - d) Discovering the relation between variables.
- 3) pH meter can be consider as voltage source with which of the following internal resistance?
  - a) Very low resistance
  - b) Moderate resistance.
  - c) Very high internal resistance.
  - d) No resistance.
- 4) The electrolyte solution within the glass electrode (ref) of the pH meter is \_\_\_\_\_.
 

a) Saturated KCL	b) Con.HCL
c) Dilute KCl	d) Dilute HCL
- 5) The formula  $C_6H_4O_2.C_6H_4(OH)_2$  represent \_\_\_\_\_.
 

a) Quinhydrone	b) Hydroquinone
c) Quinine	d) None of these
- 6) The main concept behind doing research is to \_\_\_\_\_.
  - a) Study and explore knowledge
  - b) Start with a pre-defined and clear-cut objective
  - c) Get new ideas
  - d) Define clear objective
- 7) Formulative research studies is 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 relationship between variables

- 8) Doing research requires drafting a working outline.
- a) Having a pre-defined and clear-cut objective.
  - 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.

**B) Fill in the blanks. 04**

- 1) According to advanced learners dictionaries research is search for \_\_\_\_\_.
- 2) Database is a searchable collection of \_\_\_\_\_.
- 3) Titration in which end point are determined by measurement of EMF is called \_\_\_\_\_.
- 4) In an electrolytic cell, metal passes in to ions at \_\_\_\_\_.

**Q.2 Answer the following (Any Six) 12**

- a) What is research?
- b) What are steps in research?
- c) Define pH?
- d) Write application of potentiometer.
- e) What is EMF of cell?
- f) What is reference electrode?
- g) Define hypothesis?
- h) What is Sci-finder?

**Q.3 Answer the following (Any Three) 12**

- a) Write the objectives of research.
- b) Write short note on conductivity meter.
- c) Explain ethics in research.
- d) Write the application of pH meter.

**Q.4 Answer the following (Any Two) 12**

- a) Write a note Research design.
- b) Describe types of electrode.
- c) Explain in detail scientific writing of research.

**Q.5 Answer the following (Any Two) 12**

- a) Describe in detail of research types.
- b) Write the use of computer-based equipment for pesticide analysis.
- c) Describe in detail pH metry.



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Set P

**M.Sc. (Semester - I) (Old) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Chemistry of Pesticides and Their Formulations – I (MSC26101)**

Day & Date: Friday, 10-05-2024  
 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. 10**

- 1) Which reaction involves formation of lactone?
  - a) Perkin
  - b) Aldol condensation
  - c) Stobbe condensation
  - d) MPV reduction
- 2) Benzene on reaction with alkyl halide in presence of anhydrous aluminium chloride gives toluene. This reaction is known as \_\_\_\_\_ reaction.
  - a) Friedel Craft's
  - b) Cannizzarro's
  - c) Wurtz's
  - d) Perkin's
- 3) Propene on reaction with hydrobromic acid in presence of H<sub>2</sub>O<sub>2</sub> gives \_\_\_\_\_ as a major product.
  - a) 2-bromopropane
  - b) 1 - bromo propane
  - c) 3-bromopropane
  - d) Propane
- 4) In the reaction with carbonyl compound, Grignard reagent acts as a source of \_\_\_\_\_.
  - a) Carbocation
  - b) Carbene
  - c) Free radical
  - d) Carbanion
- 5) Which of the following insecticide should be volatile?
  - a) Contact
  - b) Systemic
  - c) Fumigant
  - d) Desiccant
- 6) Pyrethrum has limited use in crop protection because of \_\_\_\_\_.
  - a) Strong insecticidal action
  - b) Poor insecticidal action
  - c) Poor stability
  - d) High stability
- 7) Phosphorous is double bonded with \_\_\_\_\_ in phorate.
  - a) Sulphur
  - b) Oxygen
  - c) Carbon
  - d) Hydrogen
- 8) Chloropyrifos contains \_\_\_\_\_ chlorine atoms.
  - a) One
  - b) Two
  - c) Three
  - d) Four
- 9) In \_\_\_\_\_ type of formulation, the weight and shape of particle should be uniform.
  - a) Dust
  - b) Pellets
  - c) EC
  - d) WP
- 10) Mosquito mats and coils contain \_\_\_\_\_.
  - a) 2,4-D
  - b) Allethrin
  - c) Dicofol
  - d) Monochrotophos

**B) Fill in the blanks.**

06

- 1) Hydride ion transfer occurs in \_\_\_\_\_ reaction.
- 2) \_\_\_\_\_ fertilizer is coated by neem.
- 3) In \_\_\_\_\_ type of formulation, the target site must be enclosed.
- 4) \_\_\_\_\_ nitrogen atoms are present in diazinon.
- 5) Ethyl alcohol on dehydration gives ethene. This is an example of \_\_\_\_\_ reaction.
- 6) Benzene mainly shows \_\_\_\_\_ type of reactions.

**Q.2 Answer the following.**

16

- a) Describe  $SN^1$  reaction with mechanism and energy profile diagram.
- b) Write note on non toxic pest controlling agents.
- c) Write properties and uses of phorate.
- d) Write note on chemosterilants.

**Q.3 Answer the following.**

16

- a) What is Friedel Craft's reaction? Describe Friedel Craft's acylation in detail.
- b) What are pyrethroids? Write synthesis and uses of fenvalerate.

**Q.4 Answer the following.**

16

- a) Write synthesis, properties, uses and environmental fate of quinolphos.
- b) Explain ozonolysis and hydration reactions of alkynes.

**Q.5 Answer the following.**

16

- a) What is Cannizzaro's reaction? Write mechanism of the reaction.
- b) Write in brief uses of neem plant as a pesticide.

**Q.6 Answer the following.**

16

- a) Explain Reformatsky reaction in detail.
- b) Describe in detail concept of adjuvant and synergism.

**Q.7 Answer the following.**

16

- a) Write synthesis, properties, uses and environmental fate of malathion.
- b) What are baits and lures? Explain their uses with example.



- B) Fill in the blanks.** **06**
- 1) Arrangement of Soil particles is referred as \_\_\_\_\_.
  - 2) Ion exchange takes place in \_\_\_\_\_.
  - 3) \_\_\_\_\_ is byproduct of steel industry.
  - 4) Coconut milk contain \_\_\_\_\_ type of growth hormone.
  - 5) Bangalore method of composting was developed by \_\_\_\_\_.
  - 6) Which one of the micro-organism involved in the production of Biofertilizers \_\_\_\_\_.

- Q.2 Answer the following.** **16**
- a) Write a short note on soil fertility.
  - b) Write a short note on needs of micronutrients.
  - c) Write in brief deficiency of Iron and Magnesium.
  - d) Write a short note on liquid manure.

- Q.3 Answer the following.** **16**
- a) What are bulky organic manures? Describe method for Adco process of compost. 07
  - b) Write in brief about Single Super phosphate.

- Q.4 Answer the following.** **16**
- a) Describe the functions of various component of soil.
  - b) What is soil? Describe the structure 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 in brief role of Boron and Manganese.
  - b) Write in brief deficiency of Iron and Magnesium.

- Q.7 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.

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**M.Sc. (Semester - I) (Old) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Introductory and Industrial Entomology (MSC26103)**

Day & Date: Wednesday, 15-05-2024  
 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.3 to Q.7.  
 3) Figure to right indicate full marks.

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

**10**

- 1) Cockroach belongs to phylum \_\_\_\_\_.  
 a) Echinodermata                      b) Mollusca  
 c) Arthropoda                          d) Brachiopod
- 2) Nest of honey bee is called as \_\_\_\_\_.  
 a) Borrows                              b) Hive  
 c) Crivices                              d) None of above
- 3) \_\_\_\_\_ in honey bee colony is feed with royal jelly.  
 a) Queen                                b) Worker  
 c) Drone                                 d) all of above
- 4) \_\_\_\_\_ mouth parts are present in cockroach.  
 a) Piercing and sucking              b) biting and chewing  
 c) Rasping                               d) Sponging
- 5) \_\_\_\_\_ is viral disease found in the honey bees.  
 a) sac brood disease                  b) American foul disease  
 c) nosema disease                    d) none of Above
- 6) Study of insect is called as \_\_\_\_\_.  
 a) Physiology                          b) Anatomy  
 c) Entomology                         d) Pathology
- 7) \_\_\_\_\_ is the biocontrol agent.  
 a) Silkworm                              b) white grub  
 c) Trichogramma                      d) Nematods
- 8) External study of insect is called as \_\_\_\_\_.  
 a) Ecology                              b) Anatomy  
 c) Physiology                          d) none of above
- 9) Mulberry silkworm belongs to family \_\_\_\_\_.  
 a) *Bombycidae*                        b) *Attacus ricinii*  
 c) *Aantheraea assama*              d) a) and b) both
- 10) \_\_\_\_\_ metamorphosis is present in white grub.  
 a) Complete                            b) Incomplete  
 c) Disturbed                            d) Merged

- B) Fill in the blanks.** **06**
- 1) White grub beetle belongs to order \_\_\_\_\_.
  - 2) Chalk brood disease is fungal disease found in the \_\_\_\_\_.
  - 3) Scientific name of mango stem borer is \_\_\_\_\_.
  - 4) \_\_\_\_\_ eyes are present in cockroach.
  - 5) \_\_\_\_\_ honey bee is called as little bee.
  - 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) Draw the neat labeled diagram of honey bee box and describe it.
  - b) Describe the life cycle pattern of Termite and write its nature of damage and control measure.
- Q.4 Answer the following.** **16**
- a) Define Apiculture, give the life cycle of honey bee.
  - b) Give the general life cycle pattern of the aphid and its control measure.
- Q.5 Answer the following.** **16**
- a) Write a disease caused in honey bee with control measure.
  - b) Define Sericulture and describe mulberry cultivation.
- Q.6 Answer the following.** **16**
- a) Describe the digestive system in cockroach, with neat labeled diagram.
  - 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.

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**M.Sc. (Semester - I) (Old) (CBCS) Examination: March/April-2024**  
**Agrochemicals and Pest Management**  
**Plant Pathology and Weed Management (MSC26108)**

Day & Date: Friday, 17-05-2024  
 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 correct alternative.**

**10**

- 1) \_\_\_\_\_ is the relative capability of a pathogen to cause the disease.
  - a) Pathogenicity
  - b) Invasion
  - c) Colonization
  - d) Infection
- 2) Diseases that are seen only occasionally, and usually without geographic concentration, are called \_\_\_\_\_ diseases.
  - a) Epidemic
  - b) Sporadic
  - c) Pandemic
  - d) Endemic
- 3) Exclusion of plant disease by legislation is known as \_\_\_\_\_.
  - a) Plant quarantine
  - b) Disease quarantine
  - c) Biological control of plant
  - d) Disease management
- 4) Weed seed dispersal takes place by \_\_\_\_\_.
  - a) Wind
  - b) Water
  - c) Animals
  - d) All of the Above
- 5) Red rot of sugar cane is caused by \_\_\_\_\_.
  - a) Claviceps fusiformis
  - b) Colletotrichum falcatum
  - c) Puccinia penneseti
  - d) Cercospora penneseti
- 6) Koch Postulates was proposed by \_\_\_\_\_.
  - a) Robert Koch
  - b) Albert Koch
  - c) Rob Koch
  - d) Robin Koch
- 7) Dodder (Cuscuta) is \_\_\_\_\_.
  - a) Algal pathogen
  - b) Fungal pathogen
  - c) Parasitic insect
  - d) Parasitic plant
- 8) Weeds having life cycle of one year are known as \_\_\_\_\_ weeds.
  - a) Annual
  - b) Biennial
  - c) Perennial
  - d) None of these
- 9) Bacterial Blight of Bean is caused by \_\_\_\_\_.
  - a) Xanthomonas aculli
  - b) Xanthomonas citri
  - d) Xanthomonas axonopodis
  - d) Xanthomonas campestris
- 10) Papaya ring rot disease caused by \_\_\_\_\_.
  - a) TMV
  - b) PRSV
  - c) BBTV
  - d) SMV

- 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) The Greening Disease of Citrus is transferred by \_\_\_\_\_ insect.
  - 4) The hand weeding is \_\_\_\_\_ method of weed control.
  - 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 Grassy shoot disease of Sugarcane with respect to causal organism, symptoms, disease cycle, and control measures.
  - c) Explain the dispersal of weed.
  - d) Write a note on plant quarantine.
- Q.3 Answer the following.**
- a) Define Plant disease. Explain in detail stages of plant disease development. **08**
  - b) Define Epidemiology. Explain elements of an epidemic disease. **08**
- Q.4 Answer the following.**
- a) Explain the following viral disease of plant with respect to causal organism, symptoms and control measures. **08**
    - A) Sugarcane mosaic
    - B) Tobacco mosaic virus
  - b) Explain the following disease of plant with respect to causal organism, symptoms and control measures. **08**
    - A) Sandle spike
    - B) Little Leaf of Brinjal
- Q.5 Answer the following.**
- a) Explain the following disease of plant with respect to causal organism, symptoms and control measures. **08**
    - A) Crown gall of Grapes
    - B) Bacterial blight of Bean
  - b) Explain the following disease of plant with respect to causal organism, symptoms and control measures. **08**
    - A) Banana leaf spot
    - B) Ergot of Bajara
- Q.6 Answer the following.**
- a) Explain the factors affecting the development of epidemic disease. **08**
  - b) Explain the following disease of plant with respect to causal organism, symptoms and control measures. **08**
    - A) Red rot of Sugarcane
    - B) Yellow vein mosaic of Bean
- Q.7 Answer the following.**
- a) Define weed. Explain in detail the classification of weeds. **08**
  - b) Enlist the methods of weed control. Explain physical & chemical methods of weed control. **08**



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Set **P**

**M.Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Chemistry of Pesticides and Their Formulations (2301201)**

Day & Date: Thursday, 09-05-2024  
 Time: 11:00 AM To 01:30 PM

Max. Marks: 60

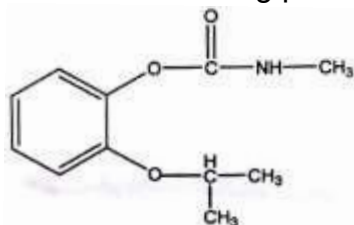
**Instructions:** 1) All questions are compulsory.  
 2) Figures to the right indicate full marks.

**Q.1 A) Choose the correct alternatives from the options.****08**

1) Reaction between diammonium ethylene dithiocarbamate with zinc sulphate gives \_\_\_\_\_.

- |          |                 |
|----------|-----------------|
| a) ziram | b) zineb        |
| c) maneb | d) All of above |

2) Name the following pesticide.



- |               |                   |
|---------------|-------------------|
| a) Endosulfon | b) Monochrotophos |
| c) Baygon     | d) Endrin         |

3) Reaction between alpha naphthol & methyl isocyanate gives \_\_\_\_\_.

- |             |               |
|-------------|---------------|
| a) methomyl | b) carbofuran |
| c) carbaryl | d) aldicarb   |

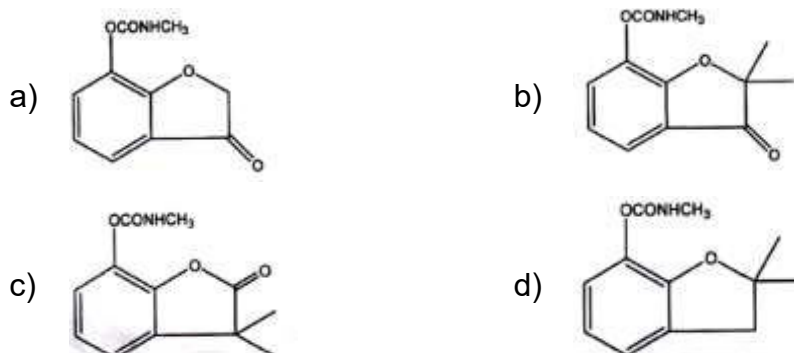
4) Ziram acts as \_\_\_\_\_.

- |                |               |
|----------------|---------------|
| a) fungicide   | b) herbicide  |
| c) insecticide | d) nematocide |

5) Thiodan is trade name of \_\_\_\_\_.

- |                |              |
|----------------|--------------|
| a) dicofol     | b) ethephon  |
| c) endosulphan | d) butachlor |

6) Name of the following insecticide.



7) The aldicarb is \_\_\_\_type of pesticide.

- |                     |                    |
|---------------------|--------------------|
| a) furyl carbamate  | b) organochlorine  |
| c) organophosphorus | d) oxime carbamate |



Seat No.	
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**M.Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Analytical Techniques for Agrochemicals (2301202)**

Day &amp; Date: Saturday, 11-05-2024

Max. Marks: 60

Time: 11:00 AM To 01:30 PM

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

**Q.1 A) Choose the correct alternatives from the options. 08**

- 1) IR spectroscopy is mainly useful in the determination of \_\_\_\_\_.
  - a) Conjugation
  - b) function group in molecule
  - c) Photoanode
  - d) None of the above
- 2) The region between \_\_\_\_\_ to \_\_\_\_\_ known as near ultraviolet region.
  - a) 200-400 nm
  - b) 800-1000nm
  - c) 300-600nm
  - d) 700-900nm
- 3) The paper chromatography is a special example of \_\_\_\_\_ chromatography.
  - a) Gas- Liquid
  - b) Solid- Liquid
  - c) Liquid- Liquid
  - d) Gas- Solid
- 4) The primary standard used in redox titration is \_\_\_\_\_.
  - a)  $K_2Cr_2O_7$
  - b) KOH
  - c) NaOH
  - d) HCl
- 5) In complex formation titrations, the indicators used are generally known as \_\_\_\_\_ indicators.
  - a) Universal
  - b) Fluorescence
  - c) Metallochromic
  - d) Chromogenic
- 6) Methyl red is \_\_\_\_\_ in acid solution.
  - a) Red
  - b) Yellow
  - c) Orange
  - d) Pink
- 7) In paper Chromatography, the  $R_f$  value is given by the equation.
  - a) Distance travelled by component divided by distance travelled by solvent
  - b) Distance travelled by solvent divided by distance travelled by solute
  - c) Distance moved by component divided by distance moved by solute
  - d) Distance moved by the substance divided by distance moved by solute
- 8) Flame photometer, mainly used for detecting \_\_\_\_\_.
  - a) N
  - b) P
  - c) K
  - d) All of these

**B) Fill in the blanks. 04**

- 1) The finger print region of the IR spectroscopy lies in the range of \_\_\_\_\_.
- 2) The ultraviolet region is subdivided into \_\_\_\_\_ spectral region.
- 3) All chromatographic techniques are based on the principle of \_\_\_\_\_.
- 4) \_\_\_\_\_ put forward the theory of acid- base indicators.

**Q.2 Answer the following. (Any Six) 12**

- a) What is separation technique?
- b) Write the application of column chromatography.
- c) What is finger print region?
- d) What are the indicators?
- e) Write the adsorbents used in TLC.
- f) Write the application of IR spectroscopy.
- g) Write in detail types of vibration.
- h) Write the application of polarimetry.

**Q.3 Answer the following. (Any Three) 12**

- a) Write a note on redox titrations.
- b) Explain in detail acid - base titration.
- c) Explain the Principle fundamental modes of vibration.
- d) Explain the paper chromatography.

**Q.4 Answer the following. (Any Two) 12**

- a) Describe instrumentation of Flame Photometry.
- b) Explain the precipitation titration method for Zn and Mg analysis in pesticide sample.
- c) Describe principle, instrumentation and applications of ion exchange chromatography.

**Q.5 Answer the following. (Any Two) 12**

- a) Describe principle, instrumentation and applications of column chromatography.
- b) Write the principle and instrumentation of atomic absorption spectroscopy.
- c) Explain the method of gravimetric estimation of iron.

Seat No.	
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**M.Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April-2024  
AGROCHEMICALS AND PEST MANAGEMENT**

**Agronomy, Biotechnology and Economic Entomology (2301206)**

Day & Date: Tuesday, 14-05-2024

Max. Marks: 60

Time: 11:00 AM To 01:30 PM

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

**Q.1 A) Choose the correct alternatives from the given options. 08**

- 1) 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
- 2) Limax spp. is \_\_\_\_\_ pest of agricultural crop.
  - a) vertebrate
  - b) insect
  - c) molluscan
  - d) nematode
- 3) \_\_\_\_\_ crop known as desert camel.
  - a) Sorghum
  - b) Wheat
  - c) Soybean
  - d) Groundnut
- 4) The recommended fertilizer dose for Pomegranate is \_\_\_\_\_ gram /tree/year with respect to NPK.
  - a) 500,600 & 600
  - b) 600, 200 & 200
  - c) 500, 600, & 700
  - d) 500, 300 & 500
- 5) An unorganized mass of cell produced during tissue culture is called \_\_\_\_\_.
  - a) Callus
  - b) thallus
  - c) Phallus
  - d) globus
- 6) Electroporation is \_\_\_\_\_ method of gene transfer.
  - a) biochemical
  - b) chemical
  - c) biological
  - d) physical
- 7) Planting of sugarcane is done in the month of January/February is known as \_\_\_\_\_.
  - a) Adsali
  - b) Suru
  - c) Pre seasonal
  - d) Post seasonal
- 8) Freedom from inert matter and defective seeds \_\_\_\_\_.
  - a) Genetic purity
  - b) germination purity
  - c) Physical purity
  - d) Disease free purity

**B) Fill in the blanks. 04**

- 1) Cockroach has \_\_\_\_\_ type of mouthpart.
- 2) In tissue culture \_\_\_\_\_ medium helps to initiate root formation.
- 3) A cross between F1 Hybrid and one of its parents is known as \_\_\_\_\_.
- 4) \_\_\_\_\_ colour certificate is issued for registered seed category by the seed certification agencies.

- Q.2 Answer the following. (Any Six) 12**
- a) Write botanical control measures of mosquitoes.
  - b) Write a note on polyphagous pests in agriculture.
  - c) Define seed technology.
  - d) Write the climate required for tomato and wheat crop plant.
  - e) Define tissue culture.
  - f) Write seed rate of maize and bajra crop plant.
  - g) What is Molluscan pest?
  - h) Enlist stored grain pests.
- Q.3 Answer the following. (Any Three) 12**
- a) Describe the damage caused by Nematode and give its classification.
  - b) Explain cultivation of guava crop with respect to soil, climate and fertilizer dose.
  - c) Explain classes of seed.
  - d) Explain micro injection method of gene transfer.
- Q.4 Answer the following. (Any Two) 12**
- a) Define horizontal resistance. Write a note on backcross method.
  - b) Explain cultivation of pomegranate crop with respect to sowing, soil, climate, protection and fertilizer dose.
  - c) Explain the sterilization methods in tissue culture.
- Q.5 Answer the following. (Any Two) 12**
- a) Write a note on Indian field mouse and monkey. Give their nature of damage and control measure.
  - b) Explain cultivation of sugarcane and groundnut crop with respect to soil, climate, method of sowing and fertilizer dose.
  - c) Explain in detail the tissue culture technique.

Seat No.	
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Set P

**M.Sc. (Semester - II) (Old) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Chemistry of Pesticides and Their Formulations - II (MSC26201)**

Day & Date: Thursday, 09-05-2024  
 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) Choose the correct alternative and rewrite the sentence. 10**

- 1) Synthesis of Baygon started from \_\_\_\_\_ molecule.
  - a) Phenol
  - b) Catechol
  - c)  $\alpha$ - naphthol
  - d)  $\beta$ - naphthol
- 2) \_\_\_\_\_ is obtained from reaction between ethylene diamine, carbon disulphide, base and zinc sulphate.
  - a) Maneb
  - b) Ziram
  - c) Zineb
  - d) Nabam
- 3) Pentachlorophenol on oxidation gives \_\_\_\_\_, which act as dehydrating agent.
  - a) Benzene
  - b) Phenol
  - c) Pentachlorobenzene
  - d) Chloronil
- 4) Antifungal and antibacterial compound used to protect seedlings contains \_\_\_\_\_ metal.
  - a) Zn
  - b) Mg
  - c) Hg
  - d) Mn
- 5) Chlorobenside is obtained by reaction of sodium salt of parachlorothiophenol with \_\_\_\_\_.
  - a) Chlorobenzene
  - b) Parachlorobenzyl chloride
  - c) Benzyl chloride
  - d) Dichlorobenzene
- 6) Synthesis of carbofuran involves \_\_\_\_\_ rearrangement reaction.
  - a) Fries
  - b) Cope
  - c) Diel's Alder
  - d) Claisen
- 7) \_\_\_\_\_ of the following acts as fumigant.
  - a) CS<sub>2</sub>
  - b) HCl
  - c) HgCl
  - d) S
- 8) Phenolic compounds act as \_\_\_\_\_.
  - a) Bactericide
  - b) Insecticide
  - c) Fungicide
  - d) All of these
- 9) MIC is used in the synthesis of \_\_\_\_\_.
  - a) Maneb
  - b) Zineb
  - c) Captan
  - d) Carbaryl





Seat No.	
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**M.Sc. (Semester - II) (Old) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Analytical Techniques for Agrochemicals (MSC26202)**

Day & Date: Saturday, 11-05-2024  
 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) A polymer containing \_\_\_\_\_ group acts as cationic resin.
  - a) Phenolic
  - b) Primary amine
  - c) Secondary amine
  - d) Tertiary amine
- 2) The process of extracting a small portion from a large quantity of material representing its true composition is called \_\_\_\_\_.
  - a) Sampling
  - b) Extraction
  - c) Qualitative analysis
  - d) Quantitative analysis
- 3) \_\_\_\_\_ of the following is used as metallochromic indicator.
  - a) Methyl orange
  - b) Eriochrome black –T
  - c) Methylene blue
  - d) Phenolphthalein
- 4) In gravimetric estimation of iron, \_\_\_\_\_ hydroxide reagent is used.
  - a) Sodium
  - b) Barium
  - c) Ammonium
  - d) Potassium
- 5) The point at which the  $P^H$  of the reaction mixture becomes exactly equal to 7 is known as \_\_\_\_\_ point
  - a) Titration
  - b) Neutral
  - c) End point
  - d) Equivalence point
- 6) A reagent which brings about precipitation is known as \_\_\_\_\_.
  - a) Precipitate
  - b) Coagulant
  - c) Precipitant
  - d) Seeding agent
- 7) The conductance of a solution depends on \_\_\_\_\_.
  - a) Mobility of ions
  - b) Number of ions
  - c) Speed of ions
  - d) All of these
- 8) An alternating current \_\_\_\_\_ polarization in the cell.
  - a) Increases
  - b) Decreases
  - c) Eliminates
  - d) Keeps same
- 9) When a molecule rotates a plane of the plane polarized light, in clockwise direction, it is known as \_\_\_\_\_ compound.
  - a) Meso
  - b) Dextro rotatory
  - c) Laevo rotatory
  - d) Racemic mixture
- 10) The measurement of intensity of \_\_\_\_\_ light as a function of concentration of suspended particles form the basis of turbidimetric analysis.
  - a) Absorbed
  - b) Scattered
  - c) Transmitted
  - d) Reflected

**B) Fill in the blanks.**

06

- 1) Phenolphthalein has \_\_\_\_\_ colour in acidic medium.
- 2) The plane polarized light is used in \_\_\_\_\_ meter.
- 3) The most widely used flame in AAS is \_\_\_\_\_.
- 4) Component with small value of distribution coefficient has affinity for \_\_\_\_\_ phase.
- 5) Silica gel is used as \_\_\_\_\_ phase in TLC.
- 6) In potentiometry calomel is used as \_\_\_\_\_ electrode.

**Q.2 Answer the following**

16

- a) Write a note on ion chromatography.
- b) Write note on specific and equivalent conductance.
- c) Explain the theory and principle of solvent extraction.
- d) Write a note on Complexometric titrations.

**Q.3 Answer the following.**

16

- a) Explain in detail, applications of AAS in the analysis of soil, water and food samples.
- b) What are indicators? Explain in detail acid - base indicators.

**Q.4 Answer the following.**

16

- a) Explain the method of gravimetric estimation of  $\text{SO}_4^{2-}$ .
- b) Describe the principle, procedure and applications of thin column chromatography.

**Q.5 Answer the following.**

16

- a) Write the principle and instrumentation of flame emission spectroscopy.
- b) Write the method and applications of  $\text{P}^{\text{H}}$  metry in analysis of food, juices, water and pesticides.

**Q.6 Answer the following.**

16

- a) Write the principle and applications of polarimetry in analysis of optically active pesticides.
- b) Write the principle, instrumentation and applications of paper chromatography.

**Q.7 Answer the following.**

16

- a) Explain the precipitation titration method for Al and Cu analysis in pesticide sample.
- b) Write the applications of Nephelometry and turbidimetry.

Seat No.	
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Set **P**

**M.Sc. (Semester – II) (Old) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Economic Entomology (MSC26206)**

Day &amp; Date: Tuesday, 14-05-2024

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) Figure to right indicate full marks.

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

- 1) \_\_\_\_\_ is household pest.
  - 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) Vertebrata
  - 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 is 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.

Seat  
No.Set **P**

**M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Pesticide Residues and Toxicology (MSC26301)**

Day & Date: Friday, 10-05-2024  
 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) Substance that binds with receptor is \_\_\_\_\_.  
 a) Insecticide  
 b) Pollutant  
 c) Agonist  
 d) Mutagen
- 2) Arsenic poisoning resembles with \_\_\_\_\_ disease.  
 a) Diabetes  
 b) Malaria  
 c) Cholera  
 d) Heart
- 3) Metal involved in Minamata disease is \_\_\_\_\_.  
 a) Cd  
 b) As  
 c) Zn  
 d) Hg
- 4) Biological mutagen from following is \_\_\_\_\_.  
 a) Virus  
 b) Bromine  
 c) X-rays  
 d) Cadmium
- 5) Continuous increase in concentration of toxicant at successive level in food chain is called as \_\_\_\_\_.  
 a) Biotransformation  
 b) Biomagnification  
 c) Bioconversion  
 d) Bioaccumulation
- 6) \_\_\_\_\_ causes abnormalities in human embryo.  
 a) Xenobiotic  
 b) Pollutant  
 c) Teratogen  
 d) Fungicide
- 7) \_\_\_\_\_ is responsible for Bhopal gas tragedy.  
 a) Carbaryl  
 b) Chlorine  
 c) SO<sub>2</sub>  
 d) MIC
- 8) Pesticide molecules binds to soil particles called \_\_\_\_\_ process.  
 a) Leaching  
 b) Adsorption  
 c) Absorption  
 d) Solubility
- 9) \_\_\_\_\_ poison is mostly used to mix with food to destroy life.  
 a) Opium  
 b) Lead  
 c) Mercury  
 d) Arsenic
- 10) Sterility in organisms is caused due to high doses of \_\_\_\_\_ metal.  
 a) Zn  
 b) Copper  
 c) Mercury  
 d) Manganese

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

- 1) Strychnine acts as \_\_\_\_\_.
- 2) \_\_\_\_\_ toxicology deals with detection, diagnosis and treatment of toxicity.
- 3) Dose-response relationship was established by \_\_\_\_\_.
- 4) Microorganisms convert pesticides from complex to simple form by process \_\_\_\_\_.
- 5) Carcinogens are responsible for \_\_\_\_\_.
- 6) Hepatic necrosis is disorder of \_\_\_\_\_.

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

- a) Write a note on Neurotic poisons.
- b) What is biomagnification?
- c) Write a note on Bhopal gas tragedy.
- d) Write the effects of toxic substances on living organisms.

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

- a) What is poison? Write symptoms and treatment of corrosive poison.
- b) Write the mechanism of action of Organophosphate and Pyrethroid insecticides.

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

- a) Explain in detail HPLC technique for pesticide residue analysis.
- b) Write in detail different disciplines of toxicology.

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

- a) What is the action of toxicant on Enzymes, Coenzymes and nucleic acids?
- b) Write a note on.
  - 1) Minamata and
  - 2) Itai - Itai disease

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

- a) Write the symptoms and treatment of Arsenic and Cadmium poisoning.
- b) Write a note on
  - i) Delirians and
  - ii) Irritants

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

- a) Write note on Biodegradation and Bioconcentration.
- b) Explain in detail gas chromatographic analysis of pesticide residues in fruits.

Seat No.	
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**M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Advances in Pest Control – I (MSC26302)**

Day & Date: Monday, 13-05-2024  
 Time: 11:00 AM To 02:00 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 correct alternative. (MCQ)**

**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 photomigration 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 resistance
- 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.

- 9) While handling duster or sprayer one should have knowledge of \_\_\_\_\_.  
 a) Insecticides mode of action  
 b) Insect pest habitat  
 c) Technique of handling agriculture appliances  
 d) All of the above
- 10) \_\_\_\_\_ is included under the pesticides.  
 a) Avicides  
 b) Insecticides  
 c) Fungicides  
 d) All of the above

**B) Fill in the blanks.**

**06**

- 1) In the acute toxicity of insecticides, the test animal is introduced to chemical \_\_\_\_\_ dose.
- 2) Pyrethroids extracted from \_\_\_\_\_ part of *chrysanthemum* plant.
- 3) *Trichogramma* is \_\_\_\_\_
- 4) Bucket pump sprayer have \_\_\_\_\_ shaped handle.
- 5) Pheromone released by one sex only but elicits response in both the sexes of the species is called as \_\_\_\_\_
- 6) The techniques of cultivating plants in a nutrient solution without the use of soil is known as \_\_\_\_\_.

**Q.2 Answer the following.**

**16**

- a) Write a note on chemosterilents.  
 b) Write a note on power operated sprayer.  
 c) Define Bioassay and write a note on sandwich method of bioassay.  
 d) Write a note on hand rotator duster.

**Q.3 Answer the following.**

**16**

- a) Give importance and side effects of Neem based preparations in insect pest management.  
 b) Write a note on attractants and repellents.

**Q.4 Answer the following.**

**16**

- a) Explain cultural and mechanical method of pest control.  
 b) Explain types of damage caused by insects to plants and their estimation.

**Q.5 Answer the following.**

**16**

- a) Define bio-efficacy to pesticide and explain any four methods of bioassay.  
 b) Explain insect insecticide resistance and resistance management.

**Q.6 Answer the following.**

**16**

- a) Explain in detail Host plant resistance  
 b) Write in brief mode of action of neem in plant protection

**Q.7 Answer the following.**

**16**

- a) Explain with neat labeled diagram parts of Bucket and Knapsack type of sprayer.  
 b) Define hydroponics. Write a note on hydroponic technique.





- 9) Rust of safflower caused due to fungus \_\_\_\_\_  
 a) *Gleosporium ampelagicum*      b) *Alternaria alternata*  
 c) *Puccinia carthami*                d) *Ceratocystis fimbriata*
- 10) Albugo Candida caused due to \_\_\_\_\_  
 a) Wilt                                        b) Root rot  
 c) White rust                                d) Leaf spot

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

- 1) Bavistin is \_\_\_\_\_ Type of fungicide.
- 2) Seed treatment is \_\_\_\_\_ method of disease control.
- 3) Drip irrigation method is control \_\_\_\_\_ disease.
- 4) Puccini caused due to \_\_\_\_\_
- 5) Bajra is \_\_\_\_\_ Type of crop.
- 6) Fusarium is \_\_\_\_\_ seed born disease.

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

- a) Write the symptoms and control rust of Sorghum.
- b) Write the common control method of disease.
- c) Enlist the general symptoms of fungal disease.
- d) Write the symptoms and control of powdery mildew sunflower.

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

- a) Write the causal organism, symptoms, disease cycle and management wilt of Tobacco.
- b) Explain the Rust and grain smut of Bajra.

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

- a) Enlist the diseases of Sorghum explain in detail Rust.
- b) Write the general symptoms and control on Downey mildew.

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

- a) Write brief the diseases of soybean.
- b) Write the diseases of Groundnut details Tikka of Groundnut.

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

- a) Explain the diseases of Gram.
- b) Write the measure diseases of Wheat explain Rust disease.

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

- a) Write the common Physical, Chemical and Biological control method of fungal disease.
- b) Enlist the diseases of sugarcane write details Red rot.

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**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Agro-Based Marketing Management (MSC26401)**

Day & Date: Thursday, 09-05-2024  
 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) Figures to the right indicate full marks.

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

- 1) \_\_\_\_\_ of marketing mix generates revenue for the enterprises.
  - a) Product
  - b) Price
  - c) Place
  - d) Promotion
- 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) Market segmentation on the basis of region is called as \_\_\_\_\_ segmentation.
  - a) psychological
  - b) behaviour
  - c) geographical
  - d) mix
- 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) Money market and capital market are known as \_\_\_\_\_ markets.
  - a) Financial
  - b) Wholesale
  - c) Securities
  - d) Commodity
- 9) \_\_\_\_\_ is 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.****06**

- 1) \_\_\_\_\_ is the systematic objective & search for the study of facts relevant to any problem in the field of Marketing.
- 2) Goods which are purchased by the consumer for consumption is known as \_\_\_\_\_ goods.
- 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) In \_\_\_\_\_ market the possession of goods is immediately given to the buyer after sale.
- 6) 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.

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

- a) Nature of marketing
- b) Types of Industrial Goods.
- c) Explain marketing planning Process.
- d) Demographical Segmentation of Market.

**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) Explain various stages in product life cycle.

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

- a) Use of 5 p's for Shubham Agro Service.
- b) What is consumer behavior and explain factor affecting consumer behavior.

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

- a) Role of Marketing in agro based business.
- b) What is e-business and explain various types of e-business.

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

- a) Describe the marketing research procedure.
- b) Important of Market Segmentation.

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**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Advances in Pest Control – II (MSC26402)**

Day & Date: Saturday, 11-05-2024  
 Time: 03:00 PM To 06:00 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) The full form of "Bt" \_\_\_\_\_.  
 a) *Bacillus thuringiensis*                      b) *Bacillus thuringens*  
 c) *Bacillus thuringe*                              d) *Bacillus thusudusis*
- 2) Due to Cytoplasmic incompatibility \_\_\_\_\_ type of insect control occurred.  
 a) mechanical                                      b) legal  
 c) genetic    d) All of the above
- 3) Chemicals released by insect for mating purpose is called \_\_\_\_\_ pheromone.  
 a) aggregation                                      b) sex  
 c) alarm    d) None of the above
- 4) The transgenic plant is simply a normal plant with one or more \_\_\_\_\_ from diverse sources.  
 a) clones    b) vector  
 c) mediator    d) additional gene
- 5) \_\_\_\_\_ pest is destroyed by Lacewing.  
 a) Sucking pest                                      b) Forest pest  
 c) Vertebrate pest                                    d) Molluscan pest
- 6) Chemicals that cause insects to make oriented movements towards their source are called \_\_\_\_\_.  
 a) antifeedants                                      b) chemosterilents  
 c) Repellent    d) Attractant
- 7) *Bacillus thuringiensis* bacterium produces a crystal toxic substance called \_\_\_\_\_.  
 a) alpha endotoxin                                    b) beta endotoxin  
 c) gamma endotoxin                                d) delta endotoxin
- 8) \_\_\_\_\_ is included under the pesticides.  
 a) Avicides    b) Insecticides  
 c) Fungicides                                        d) All of the above
- 9) Juvenile hormone is secreted by \_\_\_\_\_ of the brain.  
 a) Pituitary    b) Prothoracic  
 c) corpora alata                                      d) corpora cardiac

- 10) The full form of CPV is \_\_\_\_\_.
- Cytoplasmic Polyhydrosis Virus
  - Cytophagous virus
  - Cytochrome polished virus
  - None of the above

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

- The full form of NPV is \_\_\_\_\_.
- Use of fungi, Bacteria and viruses against pest is the example of \_\_\_\_\_ control.
- \_\_\_\_\_ are the main source of active ingredient of neem.
- \_\_\_\_\_ chemicals induce permanent sterility in both sexes.
- Bacteria mostly infect \_\_\_\_\_ of insect body.
- Harmonal IGRs work by mimicking or inhibiting \_\_\_\_\_ hormone.

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

- Write a note on Protenase inhibitor.
- Comment upon use of Repellants in insect management.
- Genetic method of pest control.
- Mode of action of viruses in insect control.

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

- What are the chemosterilant? Discuss the importance of pheromones.
- Define Somaclonal variability. Explain Protozoa in pest control.

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

- Define prey & predators. Write a note role of parasitoid in insect pest management.
- Describe the importance of IPM in pest management.

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

- Define Allelochemicals. Write a note chemicals based on insect cuticle chitin.
- Write a note on light activated pesticides.

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

- Explain in detail mode of action of *Bacillus thuringiensis* in pest management.
- Define Microbial insect control. Explain mode of action of fungus in pest management.

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

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

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**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Manufacture of Agrochemicals (MSC26403)**

Day & Date: Tuesday, 14-05-2024  
 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) Multiple choice question.**

**10**

- 1) Maneb is \_\_\_\_\_ type of pesticides.
  - a) organochlorine
  - b) organophosphorous
  - c) carbamate
  - d) botanical
- 2) Distillation is process in which \_\_\_\_\_ component are separated from the mixture.
  - a) water
  - b) solid
  - c) volatile
  - d) gas
- 3) Drying involves the removal of relatively small amount of \_\_\_\_\_ from the solute.
  - a) solute
  - b) solution
  - c) moisture
  - d) all of these
- 4) The starting material for the preparation of maneb is \_\_\_\_\_.
  - a) ethylenediamine
  - b) dimethyl amine
  - c) N,N dimethyl aniline
  - d) none of these
- 5) For the synthesis of 2, 4-D \_\_\_\_\_ of phenol is used.
  - a) bromination
  - b) chlorination
  - c) oxidation
  - d) condensation
- 6) Crystallization is the formation of \_\_\_\_\_ particles within homogeneous liquid phase.
  - a) gas
  - b) liquid
  - c) solid
  - d) semisolid
- 7) Diethyl amine & acetoacetic acid is the starting material for preparation of \_\_\_\_\_.
  - a) dimethoate
  - b) malathion
  - c) phosphamidon
  - d) chloropyrifos
- 8) The performance of an evaporator is evaluated in terms of \_\_\_\_\_.
  - a) Economy
  - b) Efficiency
  - c) Capacity
  - d) Capacity & Economy





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**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2024**  
**AGROCHEMICALS AND PEST MANAGEMENT**  
**Diseases of Crop Plants II (MSC26407)**

Day & Date: Thursday, 16-05-2024  
 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 correct alternative. (MCQ) 10**

- 1) *Cercospora sp.* Causes \_\_\_\_\_ in Sugar beet.
  - a) Wilt
  - b) leaf spot
  - c) Powdery mildew
  - d) black spot
- 2) \_\_\_\_\_ causes leaf spot of Chickoo.
  - a) *Phamoploeospora indica*
  - b) *Gleosporium ampelfagum*
  - c) *Melanoconium fulgenium*
  - d) none of above
- 3) Rose flowers are used as an \_\_\_\_\_ purposes.
  - a) Only edible
  - b) Pulses
  - c) Ornamental
  - d) Food
- 4) \_\_\_\_\_ is the economic product of Cashew nut tree.
  - a) Fruit
  - b) Nuts
  - c) Leaf
  - d) Branches
- 5) Blight of tomato caused due to fungus \_\_\_\_\_.
  - a) *Nurospora crassa*
  - b) *Alternaria alternate*
  - c) *Alternaria solani*
  - d) none of above
- 6) Black scurf of potato affects \_\_\_\_\_ fungus
  - a) Corky outgrowth on stem
  - b) Corky outgrowth on leaves
  - c) *Rhizoctonia solani*
  - d) *Nurospora crassa*
- 7) Powdery mildew found on \_\_\_\_\_ side of Bhendi.
  - a) Upper leaf
  - b) lower leaf
  - c) both 'a' and 'b'
  - d) none of above
- 8) The chain of events in the disease development with the development of pathogen and affecting host tissue is called as \_\_\_\_\_.
  - a) Disease intensity
  - b) disease cycle
  - c) disease tolerance
  - d) disease endurance
- 9) \_\_\_\_\_ causes Stem end rot of Mango.
  - a) *Collectotrichum gleosporioides*
  - b) *Gleosporium ampelfagum*
  - c) *Melanoconium fulgenium*
  - d) *Diplodia natalensis*
- 10) Bird's Eye Spot is the particular disease of \_\_\_\_\_.
  - a) Tea
  - b) Coffee
  - c) Grapes
  - d) Guava

- B) Fill in the blanks** **06**
- 1) *Albugo Candida* caused due to \_\_\_\_\_
  - 2) Fig are \_\_\_\_\_ crop
  - 3) Seed treatment control \_\_\_\_\_ disease
  - 4) \_\_\_\_\_ are used to control fungal diseases.
  - 5) Use disease resistance varieties are \_\_\_\_\_ method of disease control
  - 6) Anthracnose are caused \_\_\_\_\_
- Q.2 Answer the following.** **16**
- a) Write symptoms and control on Wilt of Tomato
  - b) Comment on the leaf spot of sapota.
  - c) Enlist and write its causal organism on diseases of Ber.
  - d) Write a Detail Physical control method of fungal diseases.
- Q.3 Answer the following.** **16**
- a) Write the diseases of Mango explain any one
  - b) Explain the Downey mildew and White rust cucurbits
- Q.4 Answer the following.** **16**
- a) Enlist the diseases of Banana write brief wilt.
  - b) Explain the brief black spot and Powdery mildew on the rose.
- Q.5 Answer the following.** **16**
- a) Explain the general symptoms of fungal diseases on crop plant.
  - b) Explain the common symptoms and control seed borne diseases.
- Q.6 Answer the following.** **16**
- a) Write symptoms and control measures on Anthracnose and stem rot of Guava.
  - b) Write the diseases of Pomegranate explain any one.
- Q.7 Answer the following.** **16**
- a) Write the diseases of Bhendi explain powdery mildew.
  - b) Explain the Downey mildew and rust of Grape