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M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
CHEMISTRY OF PESTICIDES AND THEIR FORMULATIONS – I

Day & Date: Monday, 18-11-2019
 Time: 11:30 AM To 02:00 PM

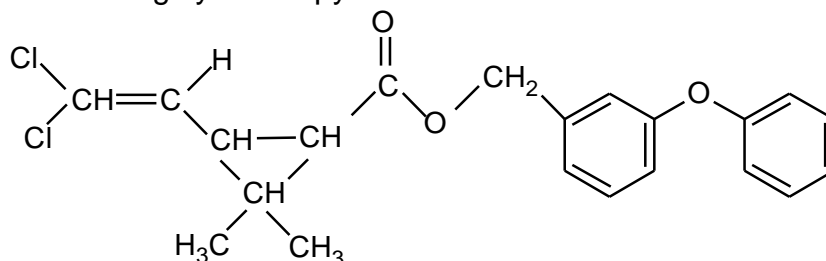
Max. Marks: 70

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

Q.1 Fill in the blanks by choose the correct alternatives given below.

14

- 1) Nitration of Benzene is example of _____.
 a) Electrophilic addition b) Electrophilic substitution
 c) Nucleophilic substitution d) Nucleophilic addition
- 2) Tertiary alkyl halide undergoes _____.
 a) SN¹- reaction b) SN²- reaction
 c) E₁- reaction d) E₂- reaction
- 3) α –β-unsaturated acid is product of _____.
 a) Hofmann's reaction b) Reformatsky reaction
 c) Perkin's reaction d) Cannizzards reaction
- 4) α-hydroxy ketone is product of _____.
 a) Benzoin Condensation b) Perkin's Condensation
 c) Claisen Condensation d) Aldol Condensation
- 5) Name the following synthetic pyrethroid.

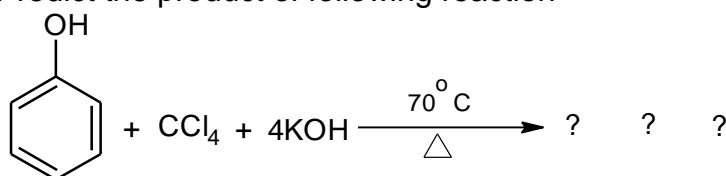


- a) Delta metherin b) Cypermetherin
 c) Permetherin d) Alethrin
- 6) Which of the following compound is formulated in the form of dust?
 a) Thimate b) Sevin
 c) Sulphur d) Neem extract
- 7) Toxicity of pesticide can be graded by _____.
 a) LD-10 b) LD-50
 c) LD-40 d) LD-5
- 8) Trade name of monocrotophos is _____.
 a) Thimate b) Azodrin
 c) Sevin d) Dimecron
- 9) Which of the following reaction is example of rearrangement?
 a) Parkin's reaction b) Knoevenagel's reaction
 c) Pinacol - Pinacolone d) Connizzarro's reaction

- 10) Trimethyl phosphite on reaction with enol form of n-methylamide acetoacetic ester gives _____.
 a) Chlorpyrifos
 b) Monocrotophos
 c) Quinalphos
 d) Diazinon
- 11) Name the following pesticide.
- The structure shows a phosphorus atom double-bonded to an oxygen and single-bonded to two methoxy groups (CH₃O). The phosphorus is also bonded to an oxygen atom that is part of an enol ether linkage: -O-C(CH₃)=C(Cl)-C(=O)-N(C₂H₅)₂.
- a) Fenitrothion
 b) Phosphamidon
 c) Schradan
 d) Dimethoate
- 12) Pyrimidine type of heterocyclic ring is present in _____.
 a) Phosalona
 b) Malathion
 c) Phorate
 d) Diazinon
- 13) Chlorpyrifos is prepared by condensation of O, O diethyl phosphorothioate with _____.
 a) 1, 2, 3 –trichloro pyridine
 b) 2, 3, 4 – trichloro pyridine
 c) 4, 5, 6 –trichloro pyridine
 d) 3, 5, 6 –trichloro pyridine
- 14) Quinalphos is decomposed at _____.
 a) 100^oc
 b) 120^oc
 c) 200^oc
 d) 150^oc

Q.2 A) Answer the following questions. (Any Four) 08

- 1) Give energy profile diagram of SN¹ reaction.
- 2) What are pheromones? Give examples.
- 3) Give structure and uses of Deltamethrin.
- 4) Explain in brief Baits and Lures.
- 5) Predict the product of following reaction



B) Write Notes. (Any Two) 06

- 1) Benzene Sulfonation reaction of Benzene
- 2) Attractants and Repellents
- 3) Use of Neem extract for pest control

Q.3 A) Answer the following questions. (Any Two) 08

- 1) Discuss Pinacol - Pinacolone rearrangement reaction with mechanism.
- 2) Give synthesis of Chlorpyrifos.
- 3) Explain applications of Dust and Granules.

B) Answer the following questions. (Any One) 06

- 1) Discuss Benzoin Condensation reaction with mechanism.
- 2) Give synthesis and uses of Phorate.

- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) Give synthesis and uses of Diazinon.
 - 2) Discuss SN² reaction with mechanism and energy profile diagram.
 - 3) Explain pest and pesticide. Give their classification based on chemical nature and types of targets.
- B) Answer the following questions. (Any One) 04**
- 1) Explain the formulation of Wettable and flowable powders.
 - 2) Give synthesis and uses of Quinalphos.
- Q.5 Answer the following questions. (Any Two) 14**
- a) Discuss Knoevenagel's reaction with mechanism.
 - b) Give synthesis of Monocrotophos and Dimethoate.
 - c) What are Pyrethroids? Give synthesis of Permethrin and Cypermethrin.

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M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
SOIL SCIENCE, FERTILIZERS, MICRONUTRIENTS AND PLANT GROWTH REGULATORS

Day & Date: Tuesday, 05-11-2019

Max. Marks: 70

Time: 11:30 AM To 02:00 PM

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat labeled diagram wherever necessary.

Q.1 Fill in the blanks by choosing correct alternatives given below.
14

- Arrangement of Soil particles is referred as _____.
 a) soil texture
 b) soil structure
 c) soil mass
 d) soil organs
- _____ is byproduct of steel industry.
 a) Basic slag
 b) Blood meal
 c) Bone meal
 d) Rock
- Bangalore method of composting was developed by _____.
 a) C. N. Acharya
 b) Howard and Word
 c) Hutchinson and Richard
 d) Fowler and Redge
- A pH value 5 indicates that soil reaction is _____.
 a) acidic
 b) alkaline
 c) neutral
 d) basic
- The amount of Nitrogen from ammonia is equal to _____.
 a) 33%
 b) 40%
 c) 46%
 d) 78%
- _____ is the growth retardant.
 a) IAA
 b) GA
 c) Cytokinin
 d) ABA
- _____ causes the fire hazards.
 a) Calcium cyanide
 b) Sodium nitrate
 c) Super phosphate
 d) Rock phosphate
- Soil colloid is a part of _____.
 a) sand
 b) clay
 c) loam
 d) humus
- The product formed by mixing ammonium hydrate with 40% lime stone is called _____.
 a) lime chalk
 b) dolomite chalk
 c) nitro chalk
 d) lime stone chalk
- Gibberellic acid is found in _____.
 a) *Avena sativa*
 b) *Gibberella fujikuroi*
 c) Corn germ oil
 d) *Micorhiza*
- Hydrogen ion concentration increases in soil, causes _____.
 a) active acidity
 b) active alkalinity
 c) salinity
 d) none of these

- 12) 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) None of the above
- 13) Interveinal chlorosis occurred due to _____.
 a) Ca b) Cu
 c) K d) Mg
- 14) Cow pea (*Vigna Cajana*) is an example of _____.
 a) Green manure b) Guano manure
 c) Bulky organic manure d) Concentrated manure

- Q.2 A) Answer the following questions. (Any Four) 08**
 1) What is soil profile?
 2) Enlist the types of fertilizers.
 3) What are the phosphate fertilizers?
 4) Enlist the micronutrients.
 5) Define biofertilizers.
- B) Write Short Notes. (Any Two) 06**
 1) Classification of fertilizers
 2) Deficiency symptoms of molybdenum
 3) Liquid manure.
- Q.3 A) Answer the following questions. (Any Two) 08**
 1) Explain pedogenesis.
 2) Write in brief manufacture of ammonium nitrate.
 3) Write in brief role of Fe and Mg.
- B) Answer the following questions. (Any One) 06**
 1) Describe the practical application of gibberellic acid.
 2) Describe the manufacture of potassium sulphate.
- Q.4 A) Answer the following questions. (Any Two) 10**
 1) Describe the effects of modern agro technology and pesticides on soil.
 2) Write in brief NPK fertilizers.
 3) Write in brief Vermicompost.
- B) Answer the following questions. (Any One) 04**
 1) Write short note on merits of biofertilizers.
 2) Avena curvature test
- Q.5 Answer the following questions. (Any Two) 14**
 a) Describe the process of soil formation.
 b) What are the phosphate fertilizers and write in brief about superphosphate.
 c) What are the natural organic manures? Describe the compost type of organic manures.

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M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
INTRODUCTORY AND INDUSTRIAL ENTOMOLOGY

Day & Date: Thursday, 07-11-2019
 Time: 11:30 AM To 02:00 PM

Max. Marks: 70

Instructions: 1) All sections are compulsory.
 2) All Questions carry equal marks.

Q.1 Fill in the blanks by choosing correct alternatives given below.

14

- 1) _____ belongs to order orthoptera.
 - a) Silkworm
 - b) Ant
 - c) Butterfly
 - d) Grasshopper
- 2) Mango stem borer belongs to the family _____.
 - a) Coleoptera
 - b) Rodentia
 - c) Diptera
 - d) Cerambycidae
- 3) In California the cottony cushion scale on citrus controlled by _____.
 - a) Water bug
 - b) Lady bird beetle
 - c) housefly
 - d) white grub
- 4) Midgut of insects is called as _____.
 - a) Malphigian tubules
 - b) Ovary
 - c) Mesenteron
 - d) Testes
- 5) Formation of _____ is called as oogenesis.
 - a) ootheca
 - b) sperm
 - c) testes
 - d) ovarioles
- 6) Fossorial legs are found in _____.
 - a) Cockroach
 - b) Mole cricket
 - c) Aphid
 - d) Thrips
- 7) _____ type of antennae are found in Housefly.
 - a) Aristate
 - b) Digging
 - c) Natatorial
 - d) Jumping
- 8) _____ type of head found in insect.
 - a) chewing & biting
 - b) siphoning
 - c) sponging
 - d) prognathus
- 9) In order dipteral _____ are modified into halter.
 - a) hind wings
 - b) fore wings
 - c) hind legs
 - d) fore legs
- 10) Lacewings are act as _____ on the sucking pest.
 - a) parasitoids
 - b) predators
 - c) parasites
 - d) none of the above
- 11) _____ is the scientific name of Rock bee.
 - a) Apis mellifera
 - b) Apis dorsata
 - c) Apis indica
 - d) none of the above

- 12) _____ species of silkworm found on *Morus alba*.
a) *Bombax mori* b) *Attacus ricinni*
c) *Antheraea paphia* d) *Apis mellifera*
- 13) Blood of insect is called as _____.
a) Malpighian tubules b) Nerve ring
c) Spiracle d) Haemolymph
- 14) _____ is the molluscan pest found in garden.
a) Snail b) Monkey
c) Rat d) Fox

- Q.2 A) Answer the following questions. (Any Four) 08**
1) Write definition of pest.
2) What is scientific name of Grass hopper?
3) Enlist different types of nematodes.
4) Write the name of different cast of honey bee.
5) Where is the habitat of termite?
- B) Write Notes. (Any Two) 06**
1) Write the name of different types of silkworm with their host plant.
2) Enlist the host plant of Aphid with their feeding habit.
3) Write short note on Leg of an insect.
- Q.3 A) Answer the following questions. (Any Two) 08**
1) Define entomology and write note on harmful insect.
2) Explain slug as molluscan pest.
3) Production of NPV.
- B) Answer the following question. (Any One) 06**
1) Enlist different type of mouth parts and explain chewing and lapping type of mouth part.
2) Describe Respiratory system of Cockroach.
- Q.4 A) Answer the following questions. (Any Two) 10**
1) Write note on Mulberry cultivation.
2) Describe nature of damage and control measures on Rat.
3) Write note on Honey.
4) Write note on spermatogenesis.
- B) Answer the following questions. (Any One) 04**
1) Control measures on White grub.
2) Damages caused by Red hairy caterpillar.
- Q.5 Answer the following questions. (Any Two) 14**
1) Describe the morphological details of abdomen in insect.
2) Define pest and write note on parasitoid with an example.
3) Describe Circulatory system of Cockroach.

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M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
PLANT PATHOLOGY AND WEED MANAGEMENT

Day & Date: Saturday, 09-11-2019
Time: 11:30 AM To 02:00 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labeled diagrams wherever necessary.

Q.1 Fill in the blanks by choosing correct alternatives given below.

14

- 1) Mildew type diseases generally caused by _____.
 - a) Algae
 - b) Bacteria
 - c) Fungi
 - d) Viruses
- 2) Crown gall of grapes caused by _____ spp.
 - a) *Nitrosomonas*
 - b) *Azotobacter*
 - c) *Xanthomonas*
 - d) *Agrobacterium*
- 3) Weeds that live for many years are called as _____ weeds.
 - a) annual
 - b) biennials
 - c) perennials
 - d) none of these
- 4) MLOs are _____ plant pathogenic organisms.
 - a) cell wall less
 - b) eukaryotic
 - c) photosynthetic
 - d) both a & b
- 5) Most of plant viruses show _____ as genetic material.
 - a) RNA
 - b) DNA
 - c) both a & b
 - d) all of these
- 6) Hand weeding is _____ method of weed control.
 - a) Biological
 - b) Physical
 - c) Chemical
 - d) None of these
- 7) Papaya ring rot disease caused by _____.
 - a) TMV
 - b) SMV
 - c) BBTV
 - d) PRSV
- 8) _____ are the green photosynthetic pathogens.
 - a) Algae
 - b) Bacteria
 - c) Fungi
 - d) Viruses
- 9) *Cephalosporium vivesense* causes _____ disease in Mango.
 - a) wilt
 - b) smut
 - c) rust
 - d) mildew
- 10) Mosaic of sugarcane is caused by _____.
 - a) TMV
 - b) SMV
 - c) MLOs
 - d) Bacteria
- 11) *Echinochloa* spp. Is _____ type of weed.
 - a) wasteland
 - b) aquatic
 - c) coastal
 - d) none of these

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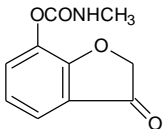
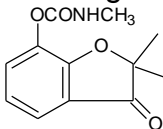
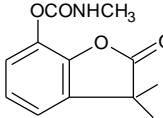
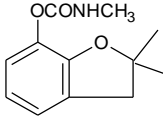
M.Sc. (Semester - II) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
CHEMISTRY OF PESTICIDES AND THEIR FORMULATIONS – II

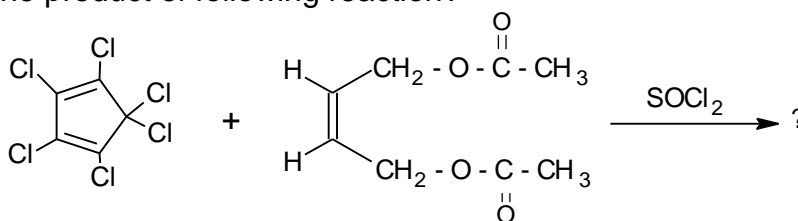
Day & Date: Monday, 04-11-2019
 Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

Q.1 Select most correct alternative for the followings & rewrite the sentence. 14

- 1) 2 - isopropyl - phenyl, N - methyl carbamate is known as _____.
 a) Aldicarb
 b) Bendiocarb
 c) Begoan
 d) Carboryl
- 2) Thiocarbamate exhibit their pesticidal activity due to release of _____.
 a) H₂S
 b) Co₂
 c) NH₃
 d) HCN
- 3) Carbofuran is represented by which of the following structure?
 a) 
 b) 
 c) 
 d) 
- 4) The Aldicarb is _____ type of pesticide.
 a) Furyl carbamate
 b) Organochlorine
 c) Organo phosphorus
 d) Oxime carbamate
- 5) Thiodan is trade name of _____.
 a) Dicofol
 b) Ethephon
 c) Endosulphan
 d) Butachlor
- 6) BHC is used for substitute for _____.
 a) DDT
 b) 2, 4-D
 c) DDVP
 d) PCNB
- 7) What is the product of following reaction?



- a) Butachlor
 b) Endosulphan
- c) Endrin
 d) Dicofol
- 8) Thiophenols and aromatic mercaptans are used as _____.
 a) Herbicide
 b) Weedicide
 c) Rodenticide
 d) Acaricide

- 3) What are fumigant? Describe the role of hydrogen cyanide and carbon disulphide in pest control.

B) Answer the following questions. (Any One) 04

- 1) Give synthesis of Butachlor. Explain environmental fate of Chloropesticides.
- 2) Explain the uses of computer based equipment in pesticide analysis.

Q.5 Answer the following questions. (Any Two) 14

- a) Give synthesis and use of Benefin and Trifluralin.
- b) Describe the structure activity relationship with carbamate pesticides. Give synthesis and uses of propoxure.
- c) Explain the role of thiocarbamate. Give synthesis of captan and parquat.

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M.Sc. (Semester - II) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
ANALYTICAL TECHNIQUES FOR AGROCHEMICALS

Day & Date: Wednesday, 06-11-2019
 Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

Q.1 Fill in the blanks by choosing correct alternatives given below. 14

- 1) The prism made up of _____ is used in Flame Photometry.
 - a) Glass
 - b) Metal
 - c) Plastic
 - d) Quartz
- 2) The most widely used flame in AAS is _____.
 - a) Air- acetylene
 - b) Air- propane
 - c) Air- coal
 - d) Air –methane
- 3) 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) None of these
- 4) Which of the following method gives exact end point in Potentiometric titrations?
 - a) Classical
 - b) First derivative
 - c) Second derivative
 - d) Integration
- 5) Quinhydrone electrode is used in _____ titration.
 - a) Conductometric
 - b) Potentiometric
 - c) Iodometric
 - d) Volumetric
- 6) The conductance of a solution depends on _____.
 - a) Mobility of ions
 - b) Number of ions
 - c) Speed of ions
 - d) All of these
- 7) The calomel electrode is used in potentiometry as _____ electrode.
 - a) Working
 - b) Auxiliary
 - c) Indicator
 - d) Reference
- 8) Glass electrode is used in _____ type of titrations.
 - a) Complexometric
 - b) Potentiometric
 - c) P^H metric
 - d) Conductometric
- 9) In complex formation titrations, the indicators used are generally known as _____ indicators.
 - a) Universal
 - b) Fluorescence
 - c) Metallochromic
 - d) Chromogenic
- 10) _____ put forward the theory of acid- base indicators.
 - a) Ostwald
 - b) Sorenson
 - c) Faraday
 - d) Einstein

- 11) The P^H range of phenolphthalein indicator is _____.
a) 7 – 10 b) 4 – 7
c) 8.3 – 10 d) 7.3 – 9.5
- 12) Alumina is the _____ phase in TLC.
a) Stationary b) Mobile
c) Reverse d) Normal
- 13) The liquid- liquid chromatography is known as _____ chromatography.
a) Gas – liquid b) Absorption
c) Adsorption d) Partition
- 14) The paper chromatography is a special example of _____ chromatography.
a) Gas- Liquid b) Solid- Liquid
c) Liquid- Liquid d) Gas- Solid

Q.2 A) Answer the following questions. (Any Four) 08

- 1) What is mean by sampling?
- 2) What is molarity of a solution?
- 3) How is conductivity water prepared?
- 4) What is plane polarized light? How is it obtained?
- 5) Write the adsorbents used in TLC.

B) Write notes. (Any Two) 06

- 1) Classification of chromatography.
- 2) Determination of Zn by precipitation titration method
- 3) Specific rotation

Q.3 A) Answer the following questions. (Any Two) 08

- 1) Describe continuous and counter-current extraction.
- 2) Describe construction and working of Calomel electrode.
- 3) Explain redox titration in detail.

B) Answer the following questions. (Any One) 06

- 1) Write applications of Turbidimetry and Nephelometry.
- 2) Write applications of P^H metry in agriculture.

Q.4 A) Answer the following questions. (Any Two) 10

- 1) Describe gravimetric estimation of SO_4^{--}
- 2) Write principle and methodology of stripping voltametry.
- 3) Describe instrumentation of Flame Photometry.

B) Answer the following questions. (Any One) 04

- 1) Describe Ion exchangers.
- 2) Advantages of AAS over Flame Emission Spectroscopy.

Q.5 Answer the following questions. (Any Two) 14

- a) Describe principle and development of paper chromatography.
- b) Explain neutralization titration curve for strong acid- strong base titration.
- c) Write procedure for determination of soil moisture by conductometer

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No.****M.Sc. (Semester - II) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
ECONOMIC ENTOMOLOGY**Day & Date: Friday, 08-11-2019
Time: 11:30 AM To 02:00 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Damaging stage of Grasshopper is _____.
a) only nymph
b) larva and adult
c) nymph and adult
d) only adult
- 2) *Myllocerus discolor* is the common name of _____.
a) Termite
b) *Thrips*
c) *Tobacco Catterpillar*
d) Ash weevil
- 3) Common green bee eater is _____ pest.
a) stored grain
b) medicinal
c) vertebrate
d) forest
- 4) White ant is _____ pest.
a) monophagous
b) household
c) stored grain
d) polyphagous
- 5) Life cycle of lepidopteran pest completes by _____ stages.
a) Egg-larva-adult
b) Egg - nymph - adult
c) Egg- larva-pupa-adult
d) None of the above
- 6) Snail is _____ pest of agricultural crop.
a) vertebrate
b) insect
c) molluscan
d) nematode
- 7) Field mouse belongs to order _____.
a) passeridae
b) cimicidae
c) podopinae
d) rodentia
- 8) The use of pent bands on trees for controlling pest population is _____ control.
a) cultural
b) chemical
c) mechanical
d) all of the above
- 9) The scientific name of Cut worm is _____.
a) *Chilo partellus*
b) *Agrotis ipsilon*
c) *Sesamia inferens*
d) *Henosepilachna vigintioctopunctata*
- 10) Bed bug belongs to the family _____.
a) curculionidae
b) cimicidae
c) podopinae
d) None of the above

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M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
PESTICIDE RESIDUES AND TOXICOLOGY

Day & Date: Monday, 18-11-2019
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) All question carry equal marks.

Q.1 Fill in the blanks by choosing correct alternatives given below.

14

- 1) _____ pesticide is permanent in the nature.
 - a) Malathion
 - b) DDT
 - c) BHC
 - d) Mercury
- 2) The fungicides kills the _____.
 - a) Insect
 - b) Bacteria
 - c) Fungi
 - d) Virus
- 3) _____ is the process by which microorganism convert pesticides from complex to simple form.
 - a) Bioaccumulation
 - b) Bioactivation
 - c) Bioconcentration
 - d) Biodegradation
- 4) Organochlorine pesticide like DDT mostly cause _____ disease in man.
 - a) Cancer
 - b) Anemia
 - c) Headache
 - d) Pneumonia
- 5) Which of the following radiations are used for the generation of mutations?
 - a) Gamma rays
 - b) X- rays
 - c) Both a & b
 - d) None of these
- 6) _____ is the movement of pesticides in water over a sloping surface.
 - a) Leaching
 - b) Absorption
 - c) Run off
 - d) Migration
- 7) The conversion of non toxic substance into toxic molecule is called _____.
 - a) Activation
 - b) Conjugation
 - c) Detoxification
 - d) Degradation
- 8) Disease Itai-Itai is caused due to chronic poisoning of _____.
 - a) Cadmium
 - b) Arsenic
 - c) Lead
 - d) Mercury
- 9) _____ is the full form of WHO.
 - a) Workers Health Organization
 - b) World Human Organization
 - c) World Headmasters Organization
 - d) World Health Organization
- 10) _____ is the father of toxicology.
 - a) Hippocrates
 - b) Paracelsus
 - c) M. J. B. Orfilla
 - d) Aristotle

- 11) Bhopal gas tragedy occurred due to _____.
 a) Methyl isocyanate b) Chlorine
 c) Hydrofluorocarbon d) Carbon monoxide
- 12) _____ is cardiac poison.
 a) HCl b) Prussic acid
 c) Opium d) Alcohol
- 13) _____ is responsible for Minamata disease.
 a) Methyl bromide b) Methyl mercury
 c) Cadmium d) Arsenic
- 14) MIC is _____.
 a) Contaminant b) Carcinogen
 c) Medicine d) None of these

Q.2 A) Attempt any four of the following question. 08

- 1) Define toxicology.
- 2) Enlist the pesticides.
- 3) What are the mutagens?
- 4) What is biodegradation?
- 5) Define biomagnifications.

B) Write Notes on (Any Two) 06

- 1) Symptoms of Arsenic.
- 2) Action of toxicant on nucleic acid.
- 3) Behavioural test toxicology testing method.

Q.3 A) Attempt any two of the following question. 08

- 1) Write symptoms and treatment of corrosives.
- 2) Explain bioaccumulation.
- 3) Explain in brief analysis of pesticide residue from vegetables.

B) Attempt any one of the following question. 06

- 1) Write in detail about toxic chemicals in water and air.
- 2) Explain biological magnification of pesticide with suitable example.

Q.4 A) Attempt any two the following question. 10

- 1) Describe the absorption, retention and transport of pesticides in soil.
- 2) Define poison, their symptoms and treatment.
- 3) Give the protocol of Gas Chromatography for fruits.

B) Attempt any one of the following question. 04

- 1) Describe the effects of pesticides on human life.
- 2) Explain in brief pesticide residue in aquatic system.

Q.5 Attempt any two the following question. 14

- a) Describe the mechanism of action of pyrethroids and Organochlorine.
- b) Explain the protocol of HPLC for fruit.
- c) Write in brief various analytical methods used for detection of pesticide residues.

Seat No.	
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M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
ADVANCES IN PEST CONTROL – I

Day & Date: Tuesday, 05-11-2019
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Fill in the blanks by choosing correct alternatives given below. 14

- 1) _____ is the cultural method used in pest control.
 - a) insecticide
 - b) herbicide
 - c) Weedicide
 - d) crop rotation
- 2) _____ is the non-poisonous or mildly poisonous chemicals that induce avoiding movements of insect towards their source.
 - a) Repellants
 - b) Chemosterilants
 - c) Attractants
 - d) none of the above
- 3) _____ component is present in neem which is important source for controlling the stored grain pest.
 - a) Chorophyll
 - b) Azadirachtin
 - c) Phloem
 - d) Xylem
- 4) Trichogramma is used as _____ for controlling the pest on rice.
 - a) predators
 - b) parasites
 - c) egg parasitoids
 - d) All of the above
- 5) _____ is the stored grain pest.
 - a) Rice weevil
 - b) Mole cricket
 - c) Aphid
 - d) Thrips
- 6) In antixenosis the host plant may reduce _____ habit of insect.
 - a) feeding
 - b) oviposition
 - c) seeking shelter
 - d) All of the above
- 7) _____ is used for controlling the rat.
 - a) Temperature
 - b) Humidity
 - c) Rodenticide
 - d) Rain
- 8) The acute toxicity of insecticides are made introducing the _____ dose of insecticide directly into stomach or to rats.
 - a) Single
 - b) Double
 - c) Triple
 - d) Multiple
- 9) In sandwich method known amount of insecticide is put in between two _____ and the batch of insect is allowed to feed on it.
 - a) Stems
 - b) Plants
 - c) Leaves
 - d) Flowers
- 10) The fumigation method is carried out in _____.
 - a) closed chamber
 - b) open air
 - c) dark room with partially ventilation
 - d) all of the above

- 11) Involvement of a single gene in the development of resistance is also called as _____ resistance.
 - a) Kdr-o gene
 - b) Polygenic
 - c) Monogenic
 - d) Kdr gene
- 12) An additive that makes pesticide formulation mix with water is called as _____.
 - a) an emulsifier
 - b) a pellet
 - c) a mixer
 - d) an adjuvant
- 13) Pest control by changing crop spacing, including crop rotation, pruning and weeding are part of the method of _____.
 - a) Biological control
 - b) Cultural control
 - c) Mechanical control
 - d) Chemical control
- 14) Pesticide designed to kill birds are called _____.
 - a) Aviacides
 - b) Miticides
 - c) Fungicides
 - d) Herbicides

Q.2 A) Answer the following (Any four) 08

- 1) Write definition of pest.
- 2) What is biological control method?
- 3) What is Chemosterilants?
- 4) Write the long form of HaNPV.
- 5) Write definition of Entomology

B) Write Notes on (Any Two) 06

- 1) Write current pest found in an around you with their host plant.
- 2) Write a note on duster.
- 3) Use of natural repellent for stored grain product.

Q.3 A) Answer the following (Any Two) 08

- 1) Write note on harmful insect.
- 2) Estimation of losses caused by insect pests.
- 3) Production of NPV

B) Answer the following (Any One) 06

- 1) Define pest and enlist the different types of pest with suitable examples.
- 2) Enlist various methods of pest control. Explain the cultural method of pest control with suitable examples.

Q.4 A) Answer the following (Any Two) 10

- 1) Plant products in pest control
- 2) Write a note on attractants
- 3) Insect growth regulators
- 4) Bioassay method

B) Answer the following (Any One) 04

- 1) Define host plant resistance. Explain mechanism of resistance in plants.
- 2) Breeding for insect resistance.

Q.5 Answer the following (Any Two) 14

- a) Give an account of Pheromones in pest control programme with suitable example.
- b) Give importance and side effects of Neem based preparations in pest management.
- c) Explain with neat labeled diagram parts of Bucket and Knapsack type of sprayer.

Seat No.	
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M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
DISEASES OF CROP PLANTS-I

Day & Date: Thursday, 07-11-2019
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
 2) Draw neat labeled diagram wherever necessary.
 3) Figures to the right indicate full marks.

Q.1 Fill in the blanks by choosing correct alternatives given below. 14

- 1) Fungi which can grow only on living host plant are called _____.
 a) Obligate saprophytes b) Facultative parasites
 c) Saprophytes d) Obligate parasites
- 2) The name 'smut diseases' is given to those produced by Ustilago because _____.
 a) its mycelium is black in color
 b) it parasitizes cereals
 c) the host becomes completely black
 d) the fungus produces black sooty spore masses
- 3) Downy mildews are caused by the members of _____.
 a) Erysiphales b) Taphrinales
 c) Ustilaginales d) Peronosporales
- 4) The computerized disease assessment training programme is _____.
 a) Distrain b) Lopat
 c) Das-Elisa d) Epidem
- 5) An internally seed borne fungal disease _____.
 a) Smut of Ragi b) Red rot of Sugarcane
 c) Loose smut of Wheat d) Grain smut of Jowar
- 6) Effective fungicide for the control of blast disease of Rice _____.
 a) Mancozeb b) Tricyclazole
 c) Fosteyl AI d) Plantvax
- 7) The Indian Phytopathological society was started by _____.
 a) B. B. Mundkur b) Coleman
 c) E-J-Butler d) Kirtikar
- 8) Host plant on which Wheat rust fungus produces telial stage is known as _____.
 a) Alternate host b) Primary host
 c) Collateral host d) Secondary host
- 9) Fungi causing Downy mildew diseases are differentiated on the basis of _____.
 a) Sporangiphore character and germination of sporangia
 b) Teliospore characters
 c) Appendages attached to the cleistothecia
 d) Conidia characters

- 10) Sulphur fungicides are very effective in the control of _____.
a) Anthracnose disease b) Powdery mildews
c) Wilts d) Downy mildews
- 11) Seed treatment fungicide for the control Downy mildew disease of Sunflower _____.
a) Apron 35 SD b) Sulphur wettable powder
c) Thiram d) Plantvax
- 12) A systemic fungicide used for the control of blast of Paddy _____.
a) Ridomil b) Alliete
c) Beam d) Contof
- 13) Wilt of pigeon pea is caused by _____.
a) Fusarium udum b) Gibberella indica
c) Rhizopus nigricans d) Aspergillus flavus
- 14) For the effective control of wilt, pigeon pea should be intercropped with _____.
a) Maize b) Pearl millet
c) Sorghum d) Green gram

Q.2 A) Answer the following question.(Any Four) 08

- 1) Write disease cycle of Blast of Rice disease.
- 2) Write symptoms of Smut disease of Maize.
- 3) Write the management of GSD of sugarcane
- 4) Write any two symptoms of rust of castor.
- 5) Write causal organisms of Green mold of Sorghum.

B) Write Notes on. (Any Two) 06

- 1) Disease cycle of white rust of mustard.
- 2) Nature of damage and management in rust of wheat.
- 3) Symptoms of anthracnose of Soybean.

Q.3 A) Answer the following question.(Any Two) 08

- 1) Write the symptoms and control measures in wilt of gram.
- 2) Disease cycle and symptoms of Powdery mildew of Pea.
- 3) Write the nature of damage and management in wilt of Sudan grass.

B) Answer the following question. (Any One) 06

- 1) Comment up on Black rot of tobacco with respect to symptoms, disease cycle and nature of damage.
- 2) Comment up on false smut of rice with respect to symptoms, disease cycle and nature of damage.

Q.4 A) Answer the following question. (Any Two) 10

- 1) Write the disease cycle and management in Powdery mildew of sesame.
- 2) Explain disease cycle in Anthracnose of cow pea.
- 3) Enlist the symptoms of rust of Sorghum.

B) Answer the following question. (Any One) 04

- 1) Enlist the symptoms and disease cycle of root rot saff flower.
- 2) Enlist the symptoms and control measures of wilt of mustard.

Q.5 Answer the following question. (Any two) 14

- a) Give details of Smut of wheat disease of Rice; with respect to causal organism, disease cycle, symptoms & control measures.
- b) Explain in details of blight of cotton; with respect to causal organism, disease, cycle, symptoms & control measures.
- c) Give details of rust of groundnut; with respect to causal organism, disease cycle, symptoms & control measures.

Seat No.	
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Set P

M.Sc. (Semester - IV) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
AGRO-BASED MARKETING MANAGEMENT

Day & Date: Monday, 04-11-2019
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Fill in the blanks by choosing correct alternatives given below.

14

- 1) _____ function of marketing create place utility in product.
 - a) Storage
 - b) Advertisement
 - c) Transportation
 - d) Product research
- 2) Market segmentation is based on _____.
 - a) Industrial
 - b) demographic
 - c) social
 - d) All of these
- 3) In e-business primarily _____ instrument is used.
 - a) printer
 - b) smart phone
 - c) fax machine
 - d) xerox machine
- 4) _____ is an end user of a product or services.
 - a) Consumer
 - b) Customer
 - c) Buyer
 - d) Mediator
- 5) _____ is part of 4p's.
 - a) Product
 - b) Price
 - c) Promotion
 - d) All of above
- 6) _____ goods are purchased by a person after proper planning & thinking.
 - a) Specially
 - b) Shopping
 - c) Convenience
 - d) Luxury
- 7) _____ is more important in agro marketing.
 - a) Public relation
 - b) Sales promotion
 - c) Publicity
 - d) Corporate image
- 8) E-business means use of _____ for purchase & sales of goods & services.
 - a) portal
 - b) telephone
 - c) internet
 - d) television
- 9) _____ is first stage of new product development.
 - a) Idea generation
 - b) Launch product
 - c) Evaluation of ideas
 - d) Brain storming
- 10) _____ Problems are/is faced by agro-based marketing.
 - a) Competition
 - b) Education
 - c) Govt. Policy
 - d) All of above
- 11) Agro based marketing management used for _____.
 - a) Social Devel
 - b) growth of agro sector
 - c) increase in sales
 - d) none of above
- 12) Marketing environment does not included _____.
 - a) legal
 - b) economical
 - c) social & cultural
 - d) history of market

- 13) Product installation service is an example of _____.
 a) after sales service b) impersonal selling
 c) indirect selling d) direct selling
- 14) Modern concept of is _____ oriented.
 a) sales b) profit
 c) production d) customer

Q.2 A) Answer the following. (Any Four) 08

- 1) Write Definition of Market Segmentation.
- 2) Enlist 7p's in marketing
- 3) Define Industrial goods.
- 4) Product Life Cycle
- 5) Enlist any four factor of external environment.

B) Write Notes. (Any Two) 06

- 1) Target Marketing
- 2) Define Market & Marketing
- 3) Personal Selling & Promotion in 4p's

Q.3 A) Answer the following. (Any Two) 08

- 1) Scope of Marketing.
- 2) Importance of consumer behavior.
- 3) Problems of agro base marketing.

B) Answer the following (Any One) 06

- 1) Factors influencing agro based marketing.
- 2) Types of consumer product.

Q.4 A) Answer the following (Any Two) 10

- 1) Explain the function of marketing.
- 2) Role of Marketing in agro based business.
- 3) Base for market segmentation.

B) Answer the following. (Any One) 04

- 1) Importance of price
- 2) Disadvantages of marketing planning

Q.5 Answer the following. (Any two) 14

- a) What is E-Business? Explain various types of E-business.
- b) Describe the marketing research procedure.
- c) Explain various stages of new product development.

Seat No.	
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M.Sc. (Semester - IV) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
ADVANCES IN PEST CONTROL – II

Day & Date: Wednesday, 06-11-2019
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Fill in the blanks by choosing correct alternatives given below.

14

- 1) Neurohormones are present in ____ organ of insects.
 - a) brain
 - b) intestine
 - c) kidney
 - d) none of the above
- 2) Resistant varieties are used in _____ method of pest control.
 - a) mechanical
 - b) legal
 - c) genetic
 - d) all the above
- 3) Anabolic toxins are synthesized by _____.
 - a) viruses only
 - b) insects
 - c) pathogens
 - d) mammals
- 4) _____ is the chemical signal conveying information between members of the same species for mating purpose.
 - a) ecdyson
 - b) choline
 - c) acytocholein
 - d) pheromone
- 5) Wasp larvae coming out from lepidopteran larval bodies is called as _____.
 - a) egg parasitoid
 - b) larval parasitoid
 - c) pupal parasitoid
 - d) adult parasitoid
- 6) Crop rotation is the method used in _____ type of pest control.
 - a) cultural
 - b) legal
 - c) genetic
 - d) all the above
- 7) Bacteria and fungi are known to produce _____.
 - a) enzymes only
 - b) exotoxines
 - c) haemotoxines
 - d) none of the above
- 8) The full form of NPV is _____.
 - a) Nuclear polyhydrous virus
 - b) Nuclear polyhydrosis virus
 - c) Nuclear poly virus
 - d) none of the above
- 9) Silent spring is a book about _____.
 - a) Physics
 - b) Environmental science
 - c) Chemistry
 - d) none of the above
- 10) Chemicals that prevent insect damage to plants and animals by rendering the unattractive is called as _____.
 - a) attractants
 - b) Chemosterilants
 - c) repellants
 - d) none of the above

- 11) _____ enzyme is known to cut the DNA fragment specifically.
 a) Restriction endonuclease b) DNA ligase
 c) Lipase d) None of the above
- 12) _____ is after entering in an organism is activated and undergoes chemical modification.
 a) propesticides b) kariomones
 c) synomone d) pheromone
- 13) IGR stands for _____.
 a) Integrated growth regulator b) Insect growth regulator
 c) Integranated growth research d) None of the above
- 14) The full form of CPV _____.
 a) Cytoplasmic polyhydrosis Virus b) Cytophagous Virus
 c) Cytochrome polished Virus d) none of the these

Q.2 A) Answer the following question. (any four) 08

- 1) Define genetic control.
- 2) What is predators.
- 3) Define mechanical control.
- 4) Which vertebrate pest is eaten by Chinese people?
- 5) What is crop rotation.

B) Write Notes on. (any Two) 06

- 1) Hot water treatment for disease control.
- 2) Light activated pesticides.
- 3) Enlist list of crop with their pest in your area.

Q.3 A) Answer the following question.(any two) 08

- 1) Viruses in pest control.
- 2) Chemicals based in insect cuticle.
- 3) Propesticides.

B) Answer the following question. (Any One) 06

- 1) Describe in brief the methodology of genetic engineering to introduce gene into plant so as to produce transgenic plants.
- 2) Describe the importance of IPM in pest management.

Q.4 A) Answer the following question. (Any Two) 10

- 1) Describe the details insect growth regulators.
- 2) Biological control in pest management.
- 3) Somaclonal variability.

B) Answer the following question. (Any One) 04

- 1) Describe the Attractants.
- 2) Nucleur Polyhydrosis Virus.

Q.5 Answer the following question. (Any two) 14

- a) What are the Pheromones? Discus the importance of Pheromones.
- b) Define the microbial control. Explain the different techniques used in microbial control with suitable example.
- c) Define Parasitoid and add a note role of predators in insect pest management.

Seat No.	
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M.Sc. (Semester - IV) (CBCS) Examination Oct/Nov-2019
Agrochemicals and Pest Management
MANUFACTURE OF AGROCHEMICALS

Day & Date: Friday, 08-11-2019
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Fill in the blanks by choosing correct alternatives given below. 14

- 1) _____ is a protective fungicide.
 - a) Thiophenate methyl
 - b) Chlorothalonil
 - c) Acetamiprid
 - d) Metalyxyl
- 2) Centrifugation is used for separation of _____.
 - a) Liquid from solid
 - b) Solid from solid
 - c) Gas from gas
 - d) Liquid from liquid
- 3) For preparation of powder from fruit juice _____ is used.
 - a) Spray dryer
 - b) Tray dryer
 - c) Evaporator
 - d) Crystallizer
- 4) Two solvents used in solvent extraction should be _____.
 - a) Miscible
 - b) Immiscible
 - c) Partially miscible
 - d) None of these
- 5) The performance of an evaporator is evaluated in terms of _____.
 - a) Economy
 - b) Capacity
 - c) Efficiency
 - d) Capacity & Economy
- 6) During the assessment of the purchase order, the copy of order is send 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
- 7) _____ causes colony collapse disorder in honey bees.
 - a) Imidacloprid
 - b) Chlorothalonil
 - c) Maneb
 - d) Captan
- 8) Ionizing radiations are used for treatment of _____.
 - a) Fracture
 - b) Asthama
 - c) Cancer
 - d) Dermatitis
- 9) Which of the following reaction is used for preparation of endosulphan?
 - a) Aldol
 - b) Canizarro
 - c) Wurtz
 - d) Deil's- Alder
- 10) Writing one functional group for another is called _____.
 - a) FGI
 - b) Disconnection
 - c) Synthron
 - d) Reageent

- 10) The name 'smut diseases' is given to those produced by *Ustilago* because _____.
- Its mycelium is black in color
 - It parasitizes cereals
 - The host becomes completely black
 - The fungus produces black sooty spore masses
- 11) Powdery mildew of Grapes caused due to _____.
- Uncinula necator*
 - Cercospora* sp.
 - Both 'a' and 'b'
 - None of these
- 12) Wilt of Peas, Beans caused due to fungus _____.
- Uncinula necator*
 - Alternaria alternate*
 - Alternaria solani*
 - None of these
- 13) Rose flowers are mainly used as an _____ purposes.
- Only edible
 - Medicinal
 - Ornamental
 - None of above
- 14) White rust of crucifer is caused by _____.
- Puccinia
 - Ustilago*
 - Cystopus
 - Peziza

Q.2 A) Answer the following questions. (Any Four) 08

- What is causal organism?
- What is pathogen?
- Define eradication.
- What is predator?
- Enlist any two diseases on onion & their causal organism.

B) Write Notes. (Any Two) 06

- General symptoms of fungal diseases
- Symptoms of downy mildew
- Control measures of wilt.

Q.3 A) Answer the following questions. (Any Two) 08

- Comment up on leaf spot of chili w.r.t. causal organism and control measures.
- Comment up on rot of sweet potato w.r.t. causal organism and control measures.
- Comment up on Fruit rot of Guava w.r.t. causal organism and control measures.

B) Answer the following questions. (Any One) 06

- Enlist any four diseases of fruit trees along with their causal organism.
- Write down the general symptoms and control measures of rust disease.

Q.4 A) Answer the following questions. (Any Two) 10

- Write down causal organism and disease cycle of powdery mildew of Ber.
- Write down control measures of 'Rust of Bamboos'.
- Enlist any four diseases of vegetables plants along with their causal organism.

B) Answer the following questions. (Any One)**04**

- 1) Write down the nature of damage caused by 'powdery mildew of Bhendi'.
- 2) Write down the symptoms and control measures of Wilt of Coconut.

Q.5 Answer the following questions. (Any Two)**14**

- a) Describe the biology, nature of damage and control measure of Scab of Apple.
- b) Explain any two diseases in *Citrus* studied by you; with respect to causal organism, symptoms & control measures.
- c) Give details of Cigatoka of Banana; with respect to causal organism, disease cycle, symptoms & control measures.

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