

Crop Protection Reviewer By Agriculture Review.

1. In Integrated Pest Management (IPM), what is the definition of the Economic Threshold (ET)?

- a. The lowest pest population density that will cause economic damage
- b. The pest density at which control measures should be initiated to prevent the population from reaching the EIL
- c. The average pest population density over a long period of time in the absence of temporary interventions
- d. The point at which the cost of pest control completely outweighs the crop value

2. Which of the following describes the Economic Injury Level (EIL)?

- a. The pest density at which the cost of control equals the value of the yield saved
- b. The maximum number of pests a plant can support before dying
- c. The pest density where damage is first visually noticed by the farmer
- d. The threshold used exclusively for applying biological control agents

3. What term describes a pest that only exceeds the Economic Injury Level (EIL) under certain unusual environmental conditions?

- a. Key pest
- b. Severe pest
- c. Occasional pest
- d. Potential pest

4. What phenomenon occurs when a broad-spectrum insecticide kills both the target pest and its natural enemies, resulting in the target pest population rebounding to even higher levels than before?

- a. Secondary pest outbreak
- b. Pest resurgence
- c. Resistance
- d. Tolerance

5. A secondary pest outbreak occurs when:

- a. A non-target insect becomes a major pest after its natural enemies are destroyed by pesticides
- b. The primary pest reproduces twice as fast in the second generation
- c. Weeds outcompete the crop during the secondary growth stage
- d. A pathogen mutates into a more virulent strain

6. Insect orders are primarily classified based on the structure of their wings and mouthparts. Which order is characterized by having 'scale-covered wings'?

- a. Coleoptera
- b. Hemiptera
- c. Lepidoptera
- d. Diptera

7. Insects in the order Lepidoptera (butterflies and moths) undergo holometabolous development. Which stage is typically the most destructive to agricultural crops?

- a. Egg
- b. Larva (caterpillar)
- c. Pupa
- d. Adult

8. Which insect order comprises the true bugs, aphids, and leafhoppers, and is characterized by piercing-sucking mouthparts?

- a. Hemiptera
- b. Hymenoptera
- c. Orthoptera
- d. Thysanoptera

9. What type of metamorphosis do insects in the order Orthoptera (grasshoppers and crickets) undergo?

- a. Ametabolous (No metamorphosis)
- b. Paurometabolous (Gradual metamorphosis)
- c. Hemimetabolous (Incomplete metamorphosis)
- d. Holometabolous (Complete metamorphosis)

10. Beetles belong to the order Coleoptera, which is the largest insect order. What is the defining characteristic of their forewings?

- a. They are membranous and used for flight
- b. They are hardened into protective wing covers called elytra
- c. They are covered in overlapping scales
- d. They are modified into halteres for balance

11. What type of damage is typically caused by insects with piercing-sucking mouthparts?

- a. Ragged, torn leaves with missing tissue
- b. Boring holes into stems or fruits
- c. Yellowing, stippling, and curling of leaves due to sap extraction
- d. Scraping of the leaf epidermis leaving a window-pane effect

12. Aphids are notorious agricultural pests not only because they drain plant sap, but also because they:

- a. Consume entire root systems within days
- b. Are the primary vectors for many plant viruses
- c. Produce a powerful toxin that instantly kills the plant
- d. Lay eggs that directly hatch into pupae

13. Which anatomical structure do insects use for respiration?

- a. Lungs
- b. Gills
- c. Spiracles and tracheae
- d. Stomata

14. The exoskeleton of an insect is primarily composed of which complex carbohydrate?

- a. Cellulose
- b. Chitin
- c. Glycogen
- d. Lignin

15. Which of the following represents the three essential components of the Plant Disease Triangle?

- a. Vector, Pathogen, Temperature
- b. Susceptible Host, Virulent Pathogen, Favorable Environment
- c. Fungus, Bacteria, Virus
- d. Soil type, Humidity, Inoculum

16. Who is widely considered the 'Father of Plant Pathology' for his discovery that the late blight of potato was caused by the fungus *Phytophthora infestans*?

- a. Louis Pasteur
- b. Robert Koch
- c. Anton de Bary
- d. Gregor Mendel

17. In plant pathology, 'inoculum' refers to:

- a. The chemical used to kill a pathogen
- b. Any part of the pathogen that can initiate infection
- c. The physical symptom shown by the plant
- d. The vector that carries the disease

18. Which of the following is a common asexual spore produced by many pathogenic fungi?

- a. Zygosporangium
- b. Ascospore
- c. Basidiospore
- d. Conidium

19. A characteristic diagnostic sign of a bacterial plant infection, often observed when a cut stem is placed in a glass of clear water, is:

- a. Fungal mycelium growth
- b. Viral mosaic patterns
- c. Bacterial streaming or oozing
- d. Formation of root galls

20. Plant viruses are obligate intracellular parasites. How do they most commonly enter a plant host in an agricultural setting?

- a. Through natural stomatal openings
- b. By dissolving the plant cell wall with enzymes
- c. Through wounds, often created by insect vectors feeding
- d. By moving directly from the soil into intact root hairs

21. Plant-parasitic nematodes are microscopic roundworms. What specialized feeding structure do they use to puncture plant cells and extract contents?

- a. Mandible
- b. Stylet
- c. Proboscis
- d. Radula

22. The genus Meloidogyne is responsible for causing significant damage to a wide variety of crops worldwide. What disease do they cause?

- a. Rice blast
- b. Bacterial wilt
- c. Root-knot
- d. Powdery mildew

23. In plant disease symptoms, what is the difference between hyperplasia and hypertrophy?

- a. Hyperplasia is cell death; hypertrophy is cell shrinkage
- b. Hyperplasia is abnormal increase in cell number; hypertrophy is abnormal increase in cell size
- c. Hyperplasia affects roots; hypertrophy affects leaves
- d. Hyperplasia is caused by viruses; hypertrophy is caused by fungi

24. 'Damping-off' is a disease that causes the rotting of seeds in the soil or the sudden death of young seedlings. It is most commonly caused by soil-borne pathogens such as:

- a. Pythium and Rhizoctonia
- b. Xanthomonas and Pseudomonas
- c. Tobacco Mosaic Virus (TMV)
- d. Meloidogyne incognita

25. By definition in agriculture, a weed is:

- a. Any plant that is poisonous
- b. A plant growing where it is not wanted
- c. A plant with no economic value
- d. Any broadleaf plant growing in a grass crop

26. How do annual weeds differ from perennial weeds?

- a. Annuals reproduce vegetatively, perennials by seed
- b. Annuals complete their life cycle in one year or less, perennials live for more than two years
- c. Annuals have deep taproots, perennials have shallow fibrous roots
- d. Annuals only grow in the dry season, perennials only in the wet season

27. A weed that requires two growing seasons to complete its life cycle, typically forming a rosette in the first year and producing seeds in the second year, is called a:

- a. Summer annual
- b. Winter annual
- c. Biennial
- d. Perennial

28. The 'stale seedbed' technique is an Integrated Weed Management (IWM) strategy that involves:

- a. Planting seeds in dry soil and waiting for rain
- b. Tilling the soil, allowing weeds to germinate, and destroying them before planting the crop
- c. Applying pre-emergence herbicides immediately after planting
- d. Flooding the field continuously for 30 days before planting

29. When identifying weeds, how can one physically distinguish a sedge from a true grass?

- a. Sedges have round, hollow stems; grasses have solid stems
- b. Sedges have showy flowers; grasses do not
- c. Sedges have solid, triangular stems; grasses generally have round, hollow stems
- d. Sedges are broadleaf plants; grasses have parallel veins

30. Striga species, commonly known as witchweeds, are severe agricultural pests. What makes them particularly difficult to control?

- a. They are resistant to all known herbicides
- b. They are parasitic weeds that attach to the roots of host crops
- c. They produce tubers that can survive deep plowing
- d. They grow taller than most crops and block all sunlight

31. The 'critical period of weed competition' refers to:

- a. The time of year when weeds produce the most seeds
- b. The specific growth stage of the crop when weed control is essential to prevent significant yield loss
- c. The first 24 hours after a herbicide is applied
- d. The period immediately following harvest

32. Some plants suppress the growth of neighboring weeds by releasing naturally occurring chemical compounds into the soil. This biological phenomenon is known as:

- a. Symbiosis
- b. Parasitism
- c. Allelopathy
- d. Mutualism

33. In chemical weed control, a herbicide that kills only certain types of plants (e.g., controlling broadleaf weeds in a corn field without harming the corn) is classified as:

- a. Non-selective
- b. Contact
- c. Selective
- d. Systemic

34. When is a 'pre-emergence' herbicide typically applied?

- a. Before the crop is planted
- b. After the crop and weeds have both emerged from the soil
- c. After planting the crop, but before the crop and weed seedlings emerge
- d. During the flowering stage of the crop

35. In biological control, what is the key difference between a predator and a parasitoid?

- a. Predators are always larger than their prey; parasitoids are always smaller
- b. Predators consume many prey items during their lifetime; a parasitoid develops on or inside a single host, eventually killing it
- c. Predators only eat plants; parasitoids only eat insects
- d. Predators are used for weed control; parasitoids are used for disease control

36. Which of the following insects is a well-known generalist predator used in biological control programs, feeding heavily on aphids and soft-bodied insects?

- a. Trichogramma wasp
- b. Ladybird beetle (Ladybug)
- c. Whitefly
- d. Diamondback moth

37. *Beauveria bassiana* and *Metarhizium anisopliae* are biological control agents classified as:

- a. Predatory nematodes
- b. Parasitic wasps
- c. Entomopathogenic fungi
- d. Bacteriophages

38. Crop rotation is a highly effective cultural control method primarily because it:

- a. Physically crushes pests in the soil
- b. Increases the organic matter so pests cannot dig
- c. Breaks the life cycle of pests by temporarily removing their host plant
- d. Makes the crops toxic to insects

39. What is the principle behind using a 'trap crop' in pest management?

- a. Planting a highly attractive plant species near the main crop to draw pests away from the valuable crop
- b. Using sticky traps placed randomly in the field to catch flying insects
- c. Growing a crop that naturally kills any insect that feeds on it
- d. Planting crops in deep trenches to trap crawling insects

40. Which of the following is considered a strictly 'mechanical' method of pest control?

- a. Applying a systemic fungicide
- b. Releasing sterile male insects
- c. Hand-picking insects off plants and destroying them
- d. Using disease-resistant crop varieties

41. Soil solarization is a physical control method that relies on harnessing solar energy to heat the soil and kill soil-borne pathogens and weed seeds. What material is typically used to cover the soil?

- a. Thick layers of organic mulch
- b. Clear polyethylene plastic sheets
- c. Black woven weed barrier fabric
- d. Aluminum foil

42. How does a systemic pesticide differ from a contact pesticide?

- a. Systemic pesticides must physically touch the insect; contact pesticides must be ingested
- b. Systemic pesticides are absorbed by the plant and translocated through its tissues; contact pesticides only remain on the plant surface
- c. Systemic pesticides only kill fungi; contact pesticides only kill insects
- d. Systemic pesticides are organic; contact pesticides are synthetic

43. In fungicide terminology, a 'protectant' fungicide:

- a. Cures a plant that is already severely infected
- b. Must be applied to the plant surface before the pathogen arrives to prevent infection
- c. Is absorbed by the roots and protects the entire vascular system
- d. Only protects the seeds during storage

44. Pesticides are formulated in various ways. What does the abbreviation 'EC' stand for on a pesticide label?

- a. Environmentally Compatible
- b. Extra Concentration
- c. Emulsifiable Concentrate
- d. Encapsulated Chemical

45. A farmer notices that their tomato plants have a white, powdery fungal growth strictly on the upper surface of the leaves. Which disease is this most likely to be?

- a. Downy mildew
- b. Powdery mildew
- c. Fusarium wilt
- d. Bacterial spot

46. The use of insect pheromone traps in an IPM program is primarily for:

- a. Instantly killing all pests in the field
- b. Monitoring pest populations to determine if and when they reach the economic threshold
- c. Attracting natural enemies to the field
- d. Sterilizing female insects

47. Which cultural practice helps manage the golden apple snail (*Pomacea canaliculata*) in flooded rice fields?

- a. Maintaining deep water continuously
- b. Applying heavy nitrogen fertilizer
- c. Intermittent draining or shallow flooding to restrict their movement
- d. Planting older, taller seedlings

48. Bt corn is a genetically modified crop designed to express a protein toxic to certain pests. What type of control does this represent?

- a. Mechanical control
- b. Cultural control
- c. Host plant resistance (Genetic control)
- d. Chemical control

49. When applying herbicides, what does 'post-emergence' mean?

- a. Application directly to the soil before weed seeds germinate
- b. Application after both the crop and the weeds have germinated and are growing
- c. Application right after harvesting the crop
- d. Application applied only to the woody stems of perennial weeds

50. Which control method involves altering the planting date of a crop to ensure that its most vulnerable growth stage does not coincide with the peak population of a specific insect pest?

- a. Cultural control
- b. Biological control
- c. Chemical control
- d. Physical control

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Answer Key

1. b	2. a	3. c	4. b	5. a
6. c	7. b	8. a	9. b	10. b
11. c	12. b	13. c	14. b	15. b
16. c	17. b	18. d	19. c	20. c
21. b	22. c	23. b	24. a	25. b
26. b	27. c	28. b	29. c	30. b
31. b	32. c	33. c	34. c	35. b
36. b	37. c	38. c	39. a	40. c
41. b	42. b	43. b	44. c	45. b
46. b	47. c	48. c	49. b	50. a