AGRICULTURE REVIEW

Crop Science Mock Examination

Instructions: Read each question carefully and choose the single best answer. The detailed answer key is provided at the end of this document for self-evaluation.

1. The branch of agricultural science that deals with the study of principles and practices of crop production and field management is known as:

A. Horticulture

B. Agronomy

C. Plant Pathology

D. Entomology

2. What is the scientific name of the world's most important cereal crop, Asian rice?

A. Zea mays

B. Triticum aestivum

C. Oryza sativa

D. Hordeum vulgare

3. Which of the following is an example of a C4 plant, known for its high photosynthetic efficiency under hot and bright conditions?

A. Rice

B. Soybean

C. Corn

D. Wheat

4. Which plant hormone is a gas at room temperature and is primarily responsible for the ripening of climacteric fruits?

A. Auxin

B. Gibberellin

C. Cytokinin

D. Ethylene

5. The transfer of pollen grains from the anther of a flower to the stigma of the same or another flower is called:

A. Fertilization

B. Pollination

C. Germination

D. Vernalization

6. Which of the following fruits exhibits a sudden burst in respiration and ethylene production during the ripening process (climacteric)?

A. Citrus

B. Pineapple

C. Mango

D. Strawberry

7. To prevent chilling injury, tropical fruits like bananas and mangoes are ideally stored at which temperature range?

A. 0 to 5°C

B. 5 to 10°C

C. 10 to 15°C

D. 20 to 25°C

8. The farming practice of growing two or more crops simultaneously on the same piece of land is called:

A. Crop rotation

B. Monocropping

C. Intercropping

D. Ratooning

9. The rice tungro disease, one of the most destructive viral diseases of rice in the Philippines, is primarily transmitted by the:

A. Brown planthopper

B. Green leafhopper

C. Rice stem borer

D. Rice bug

10. In the Philippine seed certification system, what is the color of the tag attached to a sack of Certified Seed?

A. White

B. Red

C. Green

D. Blue

11. The biological process by which plants lose water in the form of vapor through the stomata is termed:

A. Guttation

B. Transpiration

C. Respiration

D. Evaporation

12. Which essential macronutrient is most heavily demanded by crops for strong vegetative growth and dark green foliage?

A. Phosphorus

B. Potassium

C. Nitrogen

D. Calcium

13. Which of the following vegetable crops belongs to the family Solanaceae?

A. Cucumber

B. Cabbage

C. Tomato

D. Okra

14. A plant that completes its entire life cycle—from germination to seed production and death—within a single growing season is an:

A. Annual

B. Biennial

C. Perennial

D. Ephemeral

15. The biochemical process in which plants synthesize carbohydrates from carbon dioxide and water using light energy is called:

A. Respiration

B. Transpiration

C. Photosynthesis

D. Glycolysis

16. Based on Nikolai Vavilov's centers of origin, where is the accepted center of origin and diversity for corn (Zea mays)?

A. Southeast Asia

B. Middle East

C. Mesoamerica (Mexico)

D. Sub-Saharan Africa

17. The sequential growing of different crops on the same field over time to improve soil health and break pest cycles is known as:

A. Relay cropping

B. Crop rotation

C. Mixed cropping

D. Agroforestry

18. Rice blast, recognized by diamond-shaped lesions on the leaves, is caused by which type of pathogen?

A. Virus

B. Bacteria

C. Nematode

D. Fungus

19. The entire female reproductive whorl of a flower, consisting of the stigma, style, and ovary, is collectively called the:

A. Stamen

B. Corolla

C. Pistil

D. Calyx

20. What is the most widely used and recommended method of asexual propagation for commercial mango production in the Philippines?

A. Cleft grafting

B. Marcotting

C. Stem cuttings

D. Tissue culture

21. Which phytohormone is predominantly produced in the roots and actively promotes cell division and delays leaf senescence?

A. Abscisic acid

B. Auxin

C. Cytokinin

D. Gibberellin

22. What is the scientific name of the coconut, often referred to as the 'Tree of Life'?

A. Musa paradisiaca

B. Cocos nucifera

C. Elaeis guineensis

D. Carica papaya

23. In plant pathology, the 'disease triangle' dictates that a plant disease will only occur when three conditions interact: a susceptible host, a virulent pathogen, and a/an:

A. Vector

B. Alternative host

C. Favorable environment

D. Weakened defense system

24. In the context of agricultural crop protection, a weed is most accurately defined as:

A. A plant that is toxic to livestock

B. A plant growing where it is not wanted

C. A fast-growing parasitic plant

D. A non-native invasive species

25. Golden Rice is a genetically modified variety of rice designed to produce high levels of which essential micronutrient precursor in the endosperm?

A. Iron

B. Zinc

C. Vitamin C

D. Beta-carotene

26. The primary economically important and edible part of a sweet potato (Ipomoea batatas) is structurally a:

A. Bulb

B. Tuberous root

C. Rhizome

D. Stem tuber

27. Which of the following is a non-climacteric fruit, meaning it will not continue to ripen or sweeten significantly after being harvested?

A. Banana

B. Papaya

C. Avocado

D. Calamansi

28. The horticultural practice of removing the terminal bud of a plant to eliminate apical dominance and encourage lateral branching is called:

A. Pruning

B. Pinching

C. Thinning

D. Desuckering

29. Leguminous crops like soybeans and mungbeans improve soil fertility by forming a symbiotic relationship with nitrogen-fixing bacteria of the genus:

A. Azospirillum

B. Bacillus

C. Rhizobium

D. Pseudomonas

30. Under the formal seed certification system, the purest seed class directly controlled by the originating plant breeder is called:

A. Breeder seed

B. Foundation seed

C. Registered seed

D. Certified seed

31. What is the primary physiological function of stomata located on the epidermis of plant leaves?

A. Absorption of light

B. Gas exchange

C. Nutrient uptake

D. Pest deterrence

32. A plant species that retains its foliage green and functional throughout the entire year is described as:

A. Deciduous

B. Evergreen

C. Herbaceous

D. Woody

33. The exudation of water in liquid form from hydathodes at the margins of leaves, typically occurring at night or early morning under high humidity, is called:

A. Transpiration

B. Evaporation

C. Guttation

D. Condensation

34. Which of the following field crops is primarily cultivated for its high-quality oil and protein-rich seeds?

A. Cassava

B. Taro

C. Peanut

D. Sorghum

35. In most higher plants, the primary organ specifically adapted for carrying out photosynthesis is the:

A. Root

B. Stem

C. Leaf

D. Flower

36. In the multiplication chain of certified seeds, Registered Seed (green tag) is the immediate progeny of which seed class?

A. Certified seed

B. Foundation seed

C. Breeder seed

D. Good seed

37. Which of the following equations accurately calculates the Harvest Index (HI) of an agronomic crop?

A. Economic Yield / Biological Yield

B. Biological Yield / Economic Yield

C. Seed Yield / Stover Yield

D. (Biological Yield - Economic Yield) / Economic Yield

38. A type of seed dormancy caused by a hard, impermeable seed coat that restricts water imbibition and oxygen exchange is classified as:

A. Physiological dormancy

B. Morphological dormancy

C. Physical dormancy

D. Secondary dormancy

39. Unlike C3 plants, C4 plants possess Kranz anatomy. In C4 photosynthesis, the initial fixation of carbon dioxide using the PEP carboxylase enzyme occurs in the:

A. Bundle sheath cells

B. Epidermal cells

C. Guard cells

D. Mesophyll cells

40. The biological phenomenon wherein one plant species releases biochemical compounds into the environment that inhibit the germination or growth of neighboring plants is called:

A. Allelopathy

B. Symbiosis

C. Parasitism

D. Commensalism

41. Which major insect pest of rice feeds inside the stem, causing the symptoms known as 'deadheart' during the vegetative stage and 'whitehead' during the reproductive stage?

A. Rice bug

B. Brown planthopper

C. Rice leaffolder

D. Stem borer

42. The critical weed-free period for most annual field crops, representing the time when weed competition causes the most severe yield reduction, typically occurs during:

A. The first one-third to one-half of the crop's growing cycle

B. The flowering and pollination stage

C. The grain filling and maturation stage

D. The final two weeks before harvest

43. What specific type of inflorescence is characteristic of the family Asteraceae (Compositae), such as in sunflowers and chrysanthemums?

A. Umbel

B. Panicle

C. Spadix

D. Head (Capitulum)

44. To prevent fungal growth and grain heating, the standard recommended moisture content for the safe, long-term storage of milled rice or paddy in the Philippines is:

A. 10%

B. 14%

C. 18%

D. 22%

45. A specialized, thickened underground stem that grows horizontally, possessing nodes and internodes from which new shoots and roots can emerge (e.g., ginger), is called a:

A. Corm

B. Bulb

C. Rhizome

D. Stolon

46. In the principles of Integrated Pest Management (IPM), what is the term for the pest population density at which control measures must be applied to prevent the population from reaching the economic injury level?

A. General equilibrium position

B. Damage threshold

C. Economic threshold level

D. Action limit density

47. During stressful conditions such as severe drought, which plant hormone is rapidly synthesized to induce stomatal closure and reduce water loss?

A. Auxin

B. Gibberellic acid

C. Abscisic acid

D. Ethylene

48. A farmer receives a soil test recommendation of 90-30-30 kg/ha of N, P_2O_5, and K_2O. He decides to use Complete Fertilizer (14-14-14) to satisfy the P and K requirements, and Urea (46-0-0) to supply the remaining Nitrogen. How many kilograms of Urea are needed per hectare? (Round to two decimal places)

A. 130.43 kg

B. 195.65 kg

C. 214.28 kg

D. 65.21 kg

49. When measuring crop water stress using an infrared thermometer, a canopy temperature that reads significantly higher than the ambient air temperature during midday under full sun indicates:

A. High transpiration rates and adequate soil moisture

B. Stomatal closure due to severe water deficit

C. Maximum efficiency of the RuBisCO enzyme

D. Excessive root pressure and guttation

50. In plant breeding and quantitative genetics, the proportion of the total phenotypic variance that is strictly due to additive genetic effects, which dictates the response to artificial selection, is called:

A. Broad-sense heritability

B. Narrow-sense heritability

C. Genetic advance

D. Selection differential

Detailed Answer Key

Q1: Option B
Agronomy

Q2: Option C
Oryza sativa

Q3: Option C
Corn

Q4: Option D
Ethylene

Q5: Option B
Pollination

Q6: Option C
Mango

Q7: Option C
10 to 15°C

Q8: Option C
Intercropping

Q9: Option B
Green leafhopper

Q10: Option D
Blue

Q11: Option B
Transpiration

Q12: Option C
Nitrogen

Q13: Option C
Tomato

Q14: Option A
Annual

Q15: Option C
Photosynthesis

Q16: Option C
Mesoamerica (Mexico)

Q17: Option B
Crop rotation

Q18: Option D
Fungus

Q19: Option C
Pistil

Q20: Option A
Cleft grafting

Q21: Option C
Cytokinin

Q22: Option B
Cocos nucifera

Q23: Option C
Favorable environment

Q24: Option B
A plant growing where it is not wanted

Q25: Option D
Beta-carotene

Q26: Option B
Tuberous root

Q27: Option D
Calamansi

Q28: Option B
Pinching

Q29: Option C
Rhizobium

Q30: Option A
Breeder seed

Q31: Option B
Gas exchange

Q32: Option B
Evergreen

Q33: Option C
Guttation

Q34: Option C
Peanut

Q35: Option C
Leaf

Q36: Option B
Foundation seed

Q37: Option A
Economic Yield / Biological Yield

Q38: Option C
Physical dormancy

Q39: Option D
Mesophyll cells

Q40: Option A
Allelopathy

Q41: Option D
Stem borer

Q42: Option A
The first one-third to one-half of the crop's growing cycle

Q43: Option D
Head (Capitulum)

Q44: Option B
14%

Q45: Option C
Rhizome

Q46: Option C
Economic threshold level

Q47: Option C

Abscisic acid

Q48: Option A

130.43 kg

Q49: Option B

Stomatal closure due to severe water deficit

Q50: Option B

Narrow-sense heritability