# Crop Science Reviewer Based On TOS

CROP PRODUCTION PRACTICES & SITE SELECTION BY AGRICULTURE REVIEW

**1. What is the primary concept of crop production in the context of food security?**

**a.** Maximizing corporate profit at all costs through synthetic inputs
**b.** Ensuring availability, access, utilization, and stability of food supplies
**c.** Growing only high-value cash crops for international export
**d.** Eliminating all external inputs to focus on natural succession

**2. Which crop production system involves growing two or more crops in close proximity to promote beneficial biological interactions and maximize land equivalent ratio (LER)?**

**a.** Monoculture
**b.** Intercropping
**c.** Ratooning
**d.** Shifting cultivation

**3. What environmental factor has the most direct influence on the photoperiodic response and floral initiation of sensitive crops like traditional rice and soybean?**

**a.** Mean daily temperature
**b.** Soil pH levels
**c.** Day length or photoperiod
**d.** Relative atmospheric humidity

**4. Which of the following is considered a socio-cultural factor that strongly dictates the choice of crop production practices in a specific region?**

**a.** Soil cation exchange capacity
**b.** Farmers' traditional beliefs and dietary preferences
**c.** National agricultural export tariffs
**d.** Annual rainfall distribution

**5. The concept of 'sustainable agriculture' in crop production primarily emphasizes which of the following principles?**

**a.** Maximum short-term yield utilizing heavy chemical inputs
**b.** Ecological soundness, economic viability, and social equity
**c.** Complete mechanization of smallholder farms
**d.** Total reliance on imported hybrid seeds for high productivity

**6. In lowland flooded rice (paddy) cultivation, puddling is a fundamental land preparation practice. What is its primary agronomic purpose?**

**a.** To increase soil aeration for deep root penetration
**b.** To destroy soil structure and create a hardpan to reduce water percolation
**c.** To promote the rapid germination of weed seeds
**d.** To increase the oxidation of soil organic matter

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**7. In maize production, the practice of 'hilling up' is performed primarily to achieve which of the following objectives?**

**a.** To control foliar pests and diseases
**b.** To prevent lodging and suppress weed growth near the base
**c.** To induce early flowering and maturity
**d.** To deliberately reduce soil moisture during heavy rains

**8. Which specific agronomic practice involves leaving crop residues on the soil surface to conserve moisture, regulate soil temperature, and reduce erosion?**

**a.** Clean tillage
**b.** Mulching
**c.** Deep plowing
**d.** Harrowing

**9. A production system that deliberately integrates woody perennials with agricultural crops and/or livestock on the same land management unit is known as:**

**a.** Hydroponics
**b.** Agroforestry
**c.** Aeroponics
**d.** Monocropping

**10. The cultural practice of removing the apical bud to eliminate apical dominance and promote lateral branching in crops like tobacco is called:**

**a.** Pruning
**b.** Thinning
**c.** Topping
**d.** Trellising

**11. Which of the following is classified as a vegetative planting material rather than a true botanical seed?**

**a.** Corn kernel
**b.** Rice grain
**c.** Sugarcane sett
**d.** Mungbean seed

**12. In evaluating seed lots for planting, the term 'germination rate' strictly refers to:**

**a.** The speed at which the primary root emerges from the seed coat
**b.** The percentage of seeds that produce normal seedlings under optimal conditions
**c.** The volumetric size and specific gravity of the seed
**d.** The initial moisture content of the seed prior to sowing

**13. Which method of asexual plant propagation involves joining a detached shoot (scion) to a rooted plant (rootstock) so they grow as one plant?**

**a.** Air layering
**b.** Stem cutting
**c.** Grafting
**d.** Marcotting

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**14. 'Recalcitrant seeds' present specific challenges in postharvest handling and storage because they:**

**a.** Cannot survive desiccation (drying) and freezing temperatures
**b.** Germinate prematurely while still attached to the mother plant
**c.** Possess extremely hard seed coats that require acid treatment
**d.** Can be stored indefinitely without any loss of viability

**15. Calculate the required seeding rate in kg/ha for a crop aiming for 50,000 plants/ha, given a 1000-seed weight of 200g, 80 percent germination, and 100 percent physical purity.**

**a.** 10.0 kg
**b.** 12.5 kg
**c.** 15.0 kg
**d.** 20.0 kg

**16. In plant tissue culture, the excised piece of plant tissue used to initiate the sterile in vitro culture is technically referred to as the:**

**a.** Callus
**b.** Explant
**c.** Scion
**d.** Clonal plug

**17. The physiological process of gradually exposing greenhouse-grown seedlings to harsh outdoor conditions (wind, temperature) before field transplanting is known as:**

**a.** Vernalization
**b.** Hardening off
**c.** Stratification
**d.** Scarification

**18. What is the universally recommended moisture content range for orthodox cereal seeds like orthodox rice and corn to ensure safe, long-term storage without deterioration?**

**a.** 18-20 percent
**b.** 22-25 percent
**c.** 12-14 percent
**d.** 5-7 percent

**19. A recommended cultural practice used to break physical seed dormancy caused by a hard, impermeable seed coat (e.g., in Leucaena) is:**

**a.** Vernalization
**b.** Scarification
**c.** Cold stratification
**d.** Desiccation

**20. When computing seeding requirements, what does the 'purity percentage' of a seed lot indicate?**

**a.** The genetic homogeneity of the specific crop cultivar
**b.** The proportion by weight of the true seeds of the desired crop species
**c.** The absence of synthetic chemical seed treatments
**d.** The viability status of the seeds under laboratory conditions

AGRICULTURE REVIEW

**21. Physiological maturity in cereal crops is agronomically indicated by which of the following parameters?**

**a.** Maximum dry matter accumulation in the grain
**b.** Complete desiccation and browning of the flag leaf
**c.** Maximum moisture content of the developing endosperm
**d.** The beginning of natural grain shattering

**22. Which pre-harvest nutritional factor significantly influences the structural integrity and postharvest shelf life of many fruits, preventing disorders like blossom-end rot?**

**a.** Excessive nitrogen application
**b.** Phosphorus deficiency
**c.** Adequate calcium nutrition
**d.** High sodium accumulation

**23. A reliable visual maturity index commonly used by farmers for determining the proper harvesting stage of mangoes is:**

**a.** Specific gravity of the fruit
**b.** Total titratable acidity levels
**c.** Fullness of the cheeks and change in skin color
**d.** Firmness measured strictly by a penetrometer

**24. The sudden, sharp increase in cellular respiration and ethylene biosynthesis during the ripening process of certain fruits (e.g., banana, tomato) is known as:**

**a.** Senescence peak
**b.** Climacteric rise
**c.** Transpirational surge
**d.** Vernalization trigger

**25. Which vital postharvest management practice involves the rapid removal of field heat from freshly harvested horticultural produce to slow down deterioration?**

**a.** Curing
**b.** Pre-cooling
**c.** Waxing
**d.** Fumigation

**26. What is the primary physiological purpose of 'curing' root and tuber crops like sweet potato and onion immediately after harvest?**

**a.** To artificially enhance their skin color for marketability
**b.** To promote the healing of mechanical wounds and suberization of the skin
**c.** To induce early sprouting for propagation
**d.** To rapidly decrease their internal sugar content

**27. 'Horticultural maturity' (or commercial maturity) is best defined as:**

**a.** The stage when maximum dry weight is biologically reached
**b.** The stage of development when a plant or plant part possesses the prerequisites for utilization by consumers
**c.** The absolute end of the plant's biological life cycle
**d.** The exact point when seeds are fully mature and ready for replanting

AGRICULTURE REVIEW

**28. In Controlled Atmosphere (CA) storage of climacteric fruits, which specific gas is actively scrubbed or removed from the environment to delay the ripening process?**

**a.** Oxygen
**b.** Nitrogen
**c.** Carbon dioxide
**d.** Ethylene

**29. 'Black heart' in potato tubers is a distinct postharvest physiological disorder primarily caused by:**

**a.** Fungal infection during transit
**b.** Severe calcium deficiency during tuber bulking
**c.** Lack of oxygen in the inner tissues due to poor ventilation in storage
**d.** Excessive sunlight exposure postharvest causing solanine buildup

**30. Mechanical damage incurred during harvesting accelerates the deterioration of fresh produce primarily because it:**

**a.** Increases the rates of respiration and stress-induced ethylene production
**b.** Significantly decreases the rate of water loss
**c.** Enhances the enzymatic flavor profile
**d.** Forms a barrier against microbial infection

**31. When conducting site identification for an extensive crop production enterprise, a fundamental edaphic characteristic to evaluate is:**

**a.** Prevailing wind direction
**b.** Soil texture, effective depth, and drainage
**c.** Distance to the nearest urban center
**d.** Solar radiation intensity

**32. Which specific topographic feature is most critical to evaluate if the proposed site is intended for fully mechanized, large-scale cereal operations?**

**a.** High elevation and altitude
**b.** Steep slopes exceeding 18 percent
**c.** Flat to gently rolling terrain (0-8 percent slope)
**d.** Presence of deep ravines and waterways

**33. In matching crops to specific environments, the 'climatic requirements' of a plant species primarily dictate:**

**a.** The specific brand of chemical fertilizers to be utilized
**b.** The recommended spacing between planting rows
**c.** The broad geographical adaptation and regional suitability of the crop
**d.** The size and horsepower of the tractor to purchase

**34. Why is analyzing the 'cropping history' (past crops grown) a vital procedure in site evaluation?**

**a.** It determines the genetic flavor of the subsequent crop
**b.** It indicates the potential buildup of soil-borne diseases, pests, and residual herbicides
**c.** It establishes the guaranteed market price of the new crop
**d.** It is solely required for securing government agricultural subsidies

**35. According to Corona's Climate Classification in the Philippines, a crop that absolutely requires a distinct dry season for grain ripening and harvesting is best suited for which climate type?**

**a.** Type I (Two pronounced seasons: dry from Nov to April, wet rest of the year)
**b.** Type II (No dry season with a very pronounced maximum rain period)
**c.** Type III (Seasons are not very pronounced, relatively dry from Nov to April)
**d.** Type IV (Rainfall is more or less evenly distributed throughout the year)

**36. The concept of 'agro-ecological zones' assists agriculturists in site selection by:**

**a.** Grouping land areas with similar soil, landform, and climatic characteristics for targeted crop recommendations
**b.** Defining the exact political and municipal boundaries of a farming district
**c.** Classifying farmers based strictly on their annual income levels
**d.** Calculating the exact hydrological cost of deep-well irrigation

**37. When assessing water availability during site characterization, an agronomist must rigorously evaluate:**

**a.** Only the total annual rainfall metric
**b.** Both the seasonal quantity and the chemical quality (e.g., salinity) of irrigation water sources
**c.** The visual clarity and color of the surface water
**d.** The availability of commercial water pumps in the local market

**38. Which crucial soil terminology refers to the physical arrangement of primary soil particles into aggregates (peds), heavily influencing aeration, water movement, and root penetration?**

**a.** Soil texture
**b.** Soil profile
**c.** Soil structure
**d.** Soil consistency

**39. If a low-lying site with heavy clay soils, a hardpan at shallow depth, and persistent poor drainage is selected, which crop is most agronomically appropriate?**

**a.** Cassava
**b.** Papaya
**c.** Lowland paddy rice
**d.** Pineapple

**40. In evaluating a site for the establishment of a commercial fruit orchard, why is 'good air drainage' considered a highly desirable characteristic?**

**a.** It prevents the settling of cold air (frost pockets) and reduces high humidity that favors fungal diseases
**b.** It physically blows away flying insect pests from the orchard canopy
**c.** It significantly accelerates the enzymatic ripening process of the fruits
**d.** It reduces the leaching of applied nitrogen fertilizers

AGRICULTURE REVIEW

**41. The first systematic procedure when matching a location and site to a crop production enterprise should always be:**

**a.** Purchasing the planting materials and machinery
**b.** Clearing the land of all existing vegetation
**c.** Clearly defining the specific edaphic and climatic requirements of the target crop to be grown
**d.** Applying basal fertilizers across the entire farm area

**42. When comparing planting methods for a proposed site located on a steep slope (e.g., 15-18 percent), which method MUST be recommended to mitigate severe soil erosion?**

**a.** Up-and-down slope planting
**b.** Clean cultivation with deep plowing
**c.** Contour farming and terracing
**d.** Broadcast seeding directly on bare soil

**43. An environmental factor that strictly determines the upper elevational limit for growing tropical lowland crops like coconut and cacao is:**

**a.** High intensity solar radiation
**b.** High atmospheric humidity
**c.** Low temperature (chilling injury threshold)
**d.** Frequent strong prevailing winds

**44. While physical characteristics are vital, which of the following is an essential socio-economic factor that must be evaluated during site selection?**

**a.** Soil pH and organic matter content
**b.** Accessibility to farm-to-market roads and the availability of seasonal labor
**c.** Rainfall distribution and diurnal temperature range
**d.** Effective soil depth and internal drainage capacity

**45. If site evaluation reveals a highly acidic soil (pH 4.5) but all other factors are ideal for an acid-sensitive crop, what agronomic procedure must be established prior to planting?**

**a.** Application of elemental sulfur to the topsoil
**b.** Application of agricultural lime (calcium carbonate) to raise the pH
**c.** Continuous flooding of the field to leach out acids
**d.** Increasing the basal application of urea fertilizer

**46. What specialized planting method involves placing seeds directly into small slits or holes in unplowed soil, making it highly suitable for sites practicing conservation agriculture?**

**a.** Wetbed transplanting
**b.** Broadcasting
**c.** Zero-tillage (direct drilling)
**d.** Dibbling in heavily puddled soil

**47. An agriculturist is evaluating a proposed site located directly within a known typhoon belt. Which of the following crop types carries the highest environmental risk in this location?**

**a.** Root and tuber crops planted in ridges
**b.** Short-stature, lodging-resistant rice varieties
**c.** Tall, shallow-rooted fruit trees like papaya and banana
**d.** Creeping leguminous cover crops

**48. To properly relate a crop production technique to regulatory factors, which practice aligns with complying with national phytosanitary and genetic purity standards?**

**a.** Ratooning
**b.** Using certified seeds from accredited seed growers
**c.** Practicing indigenous seed saving without inspection
**d.** Applying synthetic pesticides

**49. A site evaluation reveals a high water table and frequent seasonal waterlogging. If the farmer insists on growing non-aquatic, deep-rooted crops, what infrastructure is mandatory to establish?**

**a.** An automated overhead sprinkler system
**b.** A subsurface artificial drainage system (e.g., tile drains)
**c.** Extensive windbreaks along the perimeter
**d.** High tunnel greenhouses with drip tape

**50. When dealing with postharvest technology, 'curing' is to onions and potatoes as _____ is to freshly harvested paddy rice.**

**a.** Pre-cooling
**b.** Drying
**c.** Waxing
**d.** Degreening

## Detailed Answer Key

Review the complete answer key for all 50 questions below:

| | | | | |
|---|---|---|---|---|
| **Q1: b** | **Q2: b** | **Q3: c** | **Q4: b** | **Q5: b** |
| **Q6: b** | **Q7: b** | **Q8: b** | **Q9: b** | **Q10: c** |
| **Q11: c** | **Q12: b** | **Q13: c** | **Q14: a** | **Q15: b** |
| **Q16: b** | **Q17: b** | **Q18: c** | **Q19: b** | **Q20: b** |
| **Q21: a** | **Q22: c** | **Q23: c** | **Q24: b** | **Q25: b** |
| **Q26: b** | **Q27: b** | **Q28: d** | **Q29: c** | **Q30: a** |
| **Q31: b** | **Q32: c** | **Q33: c** | **Q34: b** | **Q35: a** |
| **Q36: a** | **Q37: b** | **Q38: c** | **Q39: c** | **Q40: a** |
| **Q41: c** | **Q42: c** | **Q43: c** | **Q44: b** | **Q45: b** |
| **Q46: c** | **Q47: c** | **Q48: b** | **Q49: b** | **Q50: b** |