

UP Board Class 10 Krishi Question Paper with Solutions

Time Allowed :3.15 Hours	Maximum Marks :70	Total questions :42
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General Instructions

Instruction:

- (i) All questions are compulsory.
- (ii) This question paper has two parts - Part (A) and Part (B).
- (iii) Part-A consists of 20 multiple choice questions of one mark each that have to be answered on OMR sheet only.
- (iv) For Part-A read the question wise instructions and mark your answer on the given OMR answer sheet only. Do not erase, Cut or use whitener on OMR answer sheet after answering.
- (v) Marks of questions are mentioned against them.
- (vi) Part-B consists of descriptive type questions of 50 marks.
- (vii) All the questions of Part-B are to be attempted all at a time.
- (viii) Start from the first question and go up to the last question. Do not waste your time on the question you cannot solve.

Part-A

(Multiple Choice Type Questions)

Instructions: Four alternatives are given for each of the following questions.

Choose the correct alternative and mark on the OMR answer sheet:

1. Pusa Kartiki is a variety of which crop?

- (A) Brinjal
- (B) Cabbage
- (C) Knol-Khol
- (D) Cauliflower

Correct Answer: (A) Brinjal

Solution: Step 1: Pusa Kartiki is a known variety of brinjal (eggplant) developed by the Indian Agricultural Research Institute (IARI). It is specifically bred for its disease resistance and yield. **Step 2:** Other options like Cabbage, Knol-Khol, and Cauliflower are different crops and do not include Pusa Kartiki as a variety.

Quick Tip

Identify crop varieties by their scientific breeding origin; Pusa varieties are typically from IARI, India.

2. pH value of acidic soil is

- (A) More than 7.5
- (B) Less than 7.0
- (C) 7.5
- (D) 14.0

Correct Answer: (B) Less than 7.0

Solution: Step 1: The pH scale measures soil acidity or alkalinity, ranging from 0 to 14. A pH value below 7 indicates acidic soil. **Step 2:** Options (A) More than 7.5 and (C) 7.5 indicate neutral to alkaline soil, while (D) 14.0 is highly alkaline, not acidic.

Quick Tip

Remember: pH $<$ 7 is acidic, pH = 7 is neutral, and pH $>$ 7 is alkaline.

3. Bottlegourd belongs to which family?

- (A) Cucurbitaceae
- (B) Brassicaceae
- (C) Amaryllidaceae
- (D) Malvaceae

Correct Answer: (A) Cucurbitaceae

Solution: Step 1: Bottlegourd (*Lagenaria siceraria*) is a member of the Cucurbitaceae family, which includes other gourds and cucurbits like cucumber and pumpkin. **Step 2:** Other families listed (Brassicaceae, Amaryllidaceae, Malvaceae) include crops like cabbage, lilies, and cotton respectively, not bottlegourd.

Quick Tip

Associate Cucurbitaceae with vine crops like gourds and melons.

4. Seed rate per hectare of tomato is

- (A) 100-200 gm
- (B) 200-300 gm
- (C) 400-500 gm
- (D) 800-900 gm

Correct Answer: (B) 200-300 gm

Solution: Step 1: The recommended seed rate for tomato cultivation is typically 200-300 grams per hectare, depending on the variety and sowing method (direct seeding or transplanting). **Step 2:** Higher rates like 400-500 gm or 800-900 gm are excessive, while 100-200 gm may be insufficient for uniform coverage.

Quick Tip

Adjust seed rate based on seed quality and planting technique (transplanting usually requires less).

5. Which one of the following crops is attacked by mealy bug?

- (A) Mango
- (B) Guava
- (C) Turnip
- (D) Carrot

Correct Answer: (A) Mango

Solution: Step 1: Mealybugs are known to attack mango crops, particularly affecting the sap and causing sooty mold. **Step 2:** Guava, Turnip, and Carrot are less commonly affected by mealybugs compared to mango.

Quick Tip

Mealybugs thrive on soft-stemmed or fruit-bearing plants like mango; use integrated pest management to control.

6. Ring system of irrigation is used for

- (A) Litchi
- (B) Maize
- (C) Jwar
- (D) Moong

Correct Answer: (A) Litchi

Solution: Step 1: The ring system of irrigation is suitable for orchard crops like litchi, where water is applied in a circular basin around the tree base. **Step 2:** Maize, Jwar, and Moong are field crops better suited to furrow or sprinkler irrigation.

Quick Tip

Ring irrigation is ideal for trees; ensure proper basin maintenance to avoid waterlogging.

7. After how many days is the first irrigation done in dwarf wheat variety after sowing?

- (A) 10-15 days
- (B) 21-25 days
- (C) 30-35 days
- (D) 35-45 days

Correct Answer: (A) 10-15 days

Solution: Step 1: For dwarf wheat varieties, the first irrigation is typically done 10-15 days after sowing to support early root development. **Step 2:** Later timings (21-45 days) are used for subsequent irrigations, not the first.

Quick Tip

Timely irrigation post-sowing enhances germination; monitor soil moisture for precision.

8. Which country used first time drip irrigation system?

- (A) Japan
- (B) America
- (C) India
- (D) Israel

Correct Answer: (D) Israel

Solution: Step 1: Israel is credited with developing and first implementing the modern drip irrigation system in the 1960s, pioneered by Simcha Blass. **Step 2:** Other countries adopted it later, with improvements over time.

Quick Tip

Drip irrigation conserves water; Israel's innovation is a benchmark in arid agriculture.

9. Which chemical is used for treatment of potato seed?

- (A) Urea
- (B) Areten
- (C) Gypsum
- (D) 2,4-D

Correct Answer: (B) Areten

Solution: Step 1: Areten (a fungicide, often a brand of mancozeb or similar) is used to treat potato seeds against fungal diseases like late blight. **Step 2:** Urea is a nitrogen fertilizer, Gypsum is a soil conditioner, and 2,4-D is a herbicide, none suitable for seed treatment.

Quick Tip

Use fungicides for seed treatment to prevent rot; follow recommended dosages.

10. Budding knife is used in

- (A) Pruning
- (B) Budding
- (C) Threshing
- (D) Winnowing

Correct Answer: (B) Budding

Solution: Step 1: A budding knife is a specialized tool used in the budding process (a grafting technique) to insert a bud into the rootstock. **Step 2:** Pruning uses shears, while threshing and winnowing are for grain processing, not budding.

Quick Tip

Budding requires a sharp, precise knife; sterilize to prevent disease spread.

11. Organic material is obtained in soil from

- (A) Urea
- (B) Diammonium phosphate
- (C) Farmyard manure
- (D) Zinc

Correct Answer: (C) Farmyard manure

Solution: Step 1: Organic material in soil is derived from natural sources like farmyard manure, which consists of decomposed animal dung and plant residue. **Step 2:** Urea and Diammonium phosphate are synthetic fertilizers, while Zinc is a micronutrient, none of which provide organic matter.

Quick Tip

Farmyard manure enriches soil organic content; compost it well before application.

12. Drainage problem occurs in which type of soil?

- (A) Sandy soil
- (B) Sandy loamy soil
- (C) Heavy clay soil
- (D) Loamy soil

Correct Answer: (C) Heavy clay soil

Solution: Step 1: Heavy clay soil has fine particles that retain water, leading to poor drainage and waterlogging due to low permeability. **Step 2:** Sandy soil and loamy soil drain well, while sandy loamy soil has moderate drainage, making clay soil the primary candidate for drainage issues.

Quick Tip

Improve clay soil drainage with organic matter or raised beds.

13. Ambe bahar and Mrig bahar are related to which crop?

- (A) Papaya
- (B) Mango
- (C) Apple
- (D) Guava

Correct Answer: (B) Mango

Solution: Step 1: Ambe bahar and Mrig bahar are flowering seasons specific to mango cultivation in India, influencing fruit yield. **Step 2:** These terms are not associated with Papaya, Apple, or Guava, which have different flowering patterns.

Quick Tip

Bahar treatments in mango optimize flowering; timing is key for yield.

14. The percentage of nitrogen in ammonium chloride is

- (A) 46
- (B) 15
- (C) 25
- (D) 20

Correct Answer: (D) 20

Solution: Step 1: Ammonium chloride (NH_4Cl) contains approximately 20% nitrogen. **Step 2:** Other options (46, 15, 25) are incorrect.

Quick Tip

Check nitrogen content on fertilizer labels; ammonium chloride is a moderate nitrogen source.

15. Which one of the following is early variety of potato?

- (A) Kufri chatkari
- (B) Kufri deva
- (C) Kufri kundan
- (D) Kufri alankar

Correct Answer: (C) Kufri kundan

Solution: Step 1: Kufri kundan is an early-maturing potato variety, typically ready for harvest in 70-90 days, developed by the Central Potato Research Institute (CPRI). **Step 2:** Kufri chatkari, Kufri deva, and Kufri alankar are medium to late-maturing varieties.

Quick Tip

Early varieties like Kufri kundan suit short growing seasons; check maturity duration.

16. 2,4-D is a/an

- (A) Insecticide
- (B) Fungicide
- (C) Weedicide
- (D) Nematode controller

Correct Answer: (C) Weedicide

Solution: Step 1: 2,4-D (2,4-Dichlorophenoxyacetic acid) is a synthetic auxin herbicide, commonly used as a weedicide to control broadleaf weeds. **Step 2:** It is not an insecticide, fungicide, or nematode controller, which target insects, fungi, and nematodes respectively.

Quick Tip

Use 2,4-D selectively for weeds; avoid drift to non-target crops.

17. Sodium benzoate is a/an

- (A) Insecticide
- (B) Weedicide
- (C) Preservative
- (D) Virus

Correct Answer: (C) Preservative

Solution: Step 1: Sodium benzoate is a chemical preservative used in food and beverages to extend shelf life by inhibiting microbial growth. **Step 2:** It is not an insecticide, weedicide, or virus, which serve different purposes.

Quick Tip

Sodium benzoate is effective in acidic foods; check legal limits for use.

18. Causal organism of foot and mouth disease is

- (A) Bacteria
- (B) Virus
- (C) Fungus
- (D) Poisonous ration

Correct Answer: (B) Virus

Solution: Step 1: Foot and mouth disease (FMD) in animals is caused by a virus from the Picornaviridae family, specifically the Foot-and-Mouth Disease Virus (FMDV). **Step 2:** Bacteria, fungi, and poisonous ration are not the causal agents of this disease.

Quick Tip

FMD is highly contagious; vaccination is a key preventive measure.

19. Spoilage agent of fruits and vegetables is

- (A) Bacteria
- (B) Preservative
- (C) Salt and sugar
- (D) Weedicide

Correct Answer: (A) Bacteria

Solution: Step 1: Bacteria, such as species of Erwinia and Pseudomonas, are primary

spoilage agents causing rot in fruits and vegetables. **Step 2:** Preservatives, salt and sugar, and weedicides are used to prevent spoilage, not cause it.

Quick Tip

Control bacterial spoilage with proper storage and preservatives like vinegar.

20. Papain is related to which crop?

- (A) Mango
- (B) Guava
- (C) Ber
- (D) Papaya

Correct Answer: (D) Papaya

Solution: Step 1: Papain is a proteolytic enzyme extracted from the latex of unripe papaya fruit (*Carica papaya*), used in meat tenderizing and pharmaceuticals. **Step 2:** Mango, Guava, and Ber do not produce papain as a significant enzyme.

Quick Tip

Papain is harvested from green papaya; handle latex with care to avoid skin irritation.

Part-B

(Very Short Answer Type Questions)

1. Write the names of two chemicals for the treatment of Potato.

Correct Answer: Areten, Mancozeb

Solution: Step 1: Areten (a fungicide, often a brand of mancozeb) and Mancozeb are commonly used to treat potato seeds against fungal diseases like late blight. **Step 2:** These

chemicals help protect the crop during early growth stages by preventing rot and fungal infections.

Quick Tip

Use fungicides in recommended doses and ensure proper seed coverage.

2. Write two methods of irrigation.

Correct Answer: Drip irrigation, Furrow irrigation

Solution: Step 1: Drip irrigation delivers water directly to the plant roots, conserving water and reducing evaporation. **Step 2:** Furrow irrigation involves channeling water between crop rows, suitable for row crops like maize.

Quick Tip

Choose irrigation method based on crop type and water availability.

3. Write the names of two erosion-resistant crops.

Correct Answer: Vetiver grass, Alfalfa

Solution: Step 1: Vetiver grass has deep roots that stabilize soil and prevent erosion on slopes. **Step 2:** Alfalfa, with its extensive root system, also helps in reducing soil erosion on agricultural land.

Quick Tip

Plant erosion-resistant crops on slopes to enhance soil stability.

4. Write the names of two varieties of papaya.

Correct Answer: Red Lady, Coorg Honey Dew

Solution: Step 1: Red Lady is a popular hybrid papaya variety known for its high yield and red flesh. **Step 2:** Coorg Honey Dew is a traditional variety from India, valued for its sweet, yellow-orange fruit.

Quick Tip

Select papaya varieties based on climate and market preference.

5. Write the percentage of Nitrogen and Phosphorus in diammonium phosphate (DAP).

Correct Answer: 18

Solution: Step 1: Diammonium phosphate (DAP) contains 18% Nitrogen and 18% Phosphorus. **Step 2:** These values are standard for DAP, a widely used fertilizer providing both nutrients.

Quick Tip

Check fertilizer labels for exact N-P-K ratios before application.

6. Write the botanical name and family of Potato.

Correct Answer: Solanum tuberosum, Solanaceae

Solution: Step 1: The botanical name of potato is Solanum tuberosum, a species within the Solanaceae family. **Step 2:** The Solanaceae family also includes crops like tomato and eggplant.

Quick Tip

Memorize botanical names using family traits; Solanaceae often have nightshade relatives.

7. Write the names of two paddy varieties suitable for sowing under usar soil condition.

Correct Answer: CSR 10, CSR 27

Solution: Step 1: CSR 10 and CSR 27 are salt-tolerant paddy varieties developed for usar (saline) soil conditions by the Central Soil Salinity Research Institute (CSSRI). **Step 2:** These varieties are bred to withstand high salinity and waterlogging.

Quick Tip

Choose saline-tolerant varieties for usar soils to improve yield.

8. Write two symptoms of foot and mouth disease.

Correct Answer: Fever, Blisters on mouth and feet

Solution: Step 1: Foot and mouth disease in animals is characterized by a sudden onset of fever. **Step 2:** Blisters and sores on the mouth, tongue, and between the hooves are also common symptoms.

Quick Tip

Early detection of FMD symptoms aids in quick quarantine and treatment.

9. Write two uses of secateur.

Correct Answer: Pruning branches, Harvesting fruits

Solution: Step 1: Secateurs are used for pruning branches to shape plants and remove dead wood. **Step 2:** They are also employed for harvesting fruits and flowers with precision.

Quick Tip

Keep secateurs sharp and clean to ensure clean cuts and prevent disease spread.

10. Write two advantages of Green manure.

Correct Answer: Improves soil fertility, Reduces erosion

Solution: Step 1: Green manure, such as leguminous crops, adds organic matter and nutrients like nitrogen to improve soil fertility. **Step 2:** It also helps reduce soil erosion by covering the soil and stabilizing it with root systems.

Quick Tip

Incorporate green manure before flowering for maximum nutrient benefit.

(Short Answer Type Questions)

11. Name four varieties of Bottlegourd.

Correct Answer: Pusa Naveen, Pusa Summer Prolific, Arka Bahar, CO 1

Solution: Step 1: Pusa Naveen and Pusa Summer Prolific are varieties developed by the Indian Agricultural Research Institute (IARI) known for high yield and adaptability. **Step 2:** Arka Bahar, from the Indian Institute of Horticultural Research (IIHR), and CO 1, from Tamil Nadu Agricultural University, are also recognized bottlegourd varieties.

Quick Tip

Select bottlegourd varieties based on regional climate and market demand.

12. Write four effects of water drainage on soil.

Correct Answer: Prevents waterlogging, Improves aeration, Reduces soil salinity, Enhances root growth

Solution: Step 1: Proper drainage prevents waterlogging, which can suffocate plant roots. **Step 2:** It improves aeration by allowing oxygen to reach the soil, reduces salinity by leaching excess salts, and enhances root growth by maintaining optimal moisture.

Quick Tip

Ensure good drainage in clay soils to avoid compaction and nutrient loss.

13. Write four importance of Basin system of irrigation.

Correct Answer: Conserves water, Suitable for tree crops, Reduces weed growth, Ensures uniform water distribution

Solution: Step 1: The basin system conserves water by applying it directly to the root zone of trees. **Step 2:** It is ideal for tree crops, reduces weed growth by limiting water to the basin, and ensures uniform water distribution for effective irrigation.

Quick Tip

Use basin irrigation for orchards; maintain basin integrity to prevent leaks.

14. Write the names of four wheat varieties for late sown condition.

Correct Answer: HD 2967, PBW 590, DBW 17, HI 1564

Solution: Step 1: HD 2967 and PBW 590 are late-sown wheat varieties known for their adaptability to delayed planting in India. **Step 2:** DBW 17 and HI 1564 are also bred for late sowing, offering good yield under shorter growing periods.

Quick Tip

Choose late-sown varieties with shorter maturity periods for delayed planting.

15. Draw a diagram of cow dung.

Correct Answer: (A simple diagram cannot be drawn in text; refer to a sketch of a pile of cow dung with labeled parts like organic matter and moisture content.)

Solution: Step 1: Cow dung is a moist, dark brown organic material consisting of undigested plant fiber, microbes, and moisture. **Step 2:** A typical diagram would show a pile with labels for organic matter (e.g., cellulose) and moisture, representing its composition as a natural fertilizer.

Quick Tip

Sketch cow dung as a heap; label key components for educational purposes.

16. Write four advantages of organic manuring in vegetable production.

Correct Answer: Improves soil structure, Enhances nutrient availability, Reduces chemical use, Promotes microbial activity

Solution: Step 1: Organic manuring improves soil structure by adding organic matter, enhancing water retention. **Step 2:** It releases nutrients slowly, reduces reliance on chemical fertilizers, and promotes beneficial microbial activity in the soil.

Quick Tip

Apply organic manure well before planting for best soil health benefits.

17. Write four objectives of fruit preservation.

Correct Answer: Extend shelf life, Maintain nutritional value, Prevent spoilage, Ensure year-round availability

Solution: Step 1: Preservation extends shelf life by inhibiting microbial growth and enzymatic activity. **Step 2:** It maintains nutritional value, prevents spoilage, and ensures fruits are available throughout the year.

Quick Tip

Use methods like canning or drying to preserve fruit quality effectively.

18. Write the names of four products prepared from tomato.

Correct Answer: Tomato sauce, Ketchup, Tomato puree, Sun-dried tomatoes

Solution: Step 1: Tomato sauce and ketchup are processed products made by cooking and seasoning tomatoes. **Step 2:** Tomato puree is a concentrated form, and sun-dried tomatoes are dehydrated for long-term storage.

Quick Tip

Process tomatoes when fresh to maximize flavor and nutrient retention.

(Long Answers Type Questions)

19. Describe the cultivation of wheat under the following heads:

- a) Selection of soil and preparation**
- b) Two improved varieties**
- c) Time of sowing and seed rate per hectare**
- d) Manure and fertilizer per hectare**
- e) Yield per hectare**

Solution: a) Selection of soil and preparation: Wheat thrives in deep, fertile loamy soils with good drainage and a pH of 6.0-7.5. Sandy loam to clay loam is ideal. Preparation involves 3-4 ploughings followed by harrowing to achieve a fine tilth, incorporating 10-12.5 tons/ha of farmyard manure (FYM) 5-6 weeks before sowing.

b) Two improved varieties: HD 2967 (high-yielding, rust-resistant) and PBW 502 (suitable for timely sown irrigated conditions, good chapati quality).

c) Time of sowing and seed rate per hectare: Optimal sowing time is mid-October to mid-November for timely varieties (e.g., 1-15 Nov in North West Plain Zone). Seed rate: 100-125 kg/ha for normal sowing.

d) Manure and fertilizer per hectare: Apply 120 kg N, 60 kg PO, and 40 kg KO per hectare. Full P and K, and half N as basal; remaining N at crown root initiation stage.

e) **Yield per hectare:** Average yield is 40-50 q/ha (4-5 tons/ha) under irrigated conditions with improved practices.

Quick Tip

Timely sowing and balanced fertilization are key to achieving high wheat yields; monitor soil moisture for optimal irrigation.

20. Describe the cultivation of papaya under the following heads:

a) **Selection of soil and preparation**

b) **Two improved varieties**

c) **Manure and fertilizer**

d) **Planting time and distance in between**

e) **Time of irrigation and method**

Solution: a) Selection of soil and preparation: Well-drained sandy loam or loamy soil with pH 6.0-7.0; avoid waterlogging. Prepare by ploughing twice, incorporating 20-25 tons/ha FYM, and digging pits (60x60x60 cm) filled with topsoil + 20 kg FYM.

b) Two improved varieties: Red Lady (hybrid, high yield, red flesh) and Pusa Dwarf (compact, early bearing, suitable for high density).

c) Manure and fertilizer: Basal: 10 kg FYM/plant. Annual: 400 g N, 250 g PO, 400 g KO per plant in 6 split doses; micronutrients like ZnSO (0.5

d) Planting time and distance in between: Plant in June-July (rainy season start). Spacing: 2.0 x 2.0 m or 2.5 x 1.8 m for high density (two plants/pit at 30 cm apart).

e) Time of irrigation and method: Irrigate immediately after planting; young plants: 1-2 times/week; mature: every 7-10 days in summer, 10-15 days in winter. Use drip or basin method to avoid water contact with stem.

Quick Tip

Papaya is sensitive to waterlogging; ensure good drainage and use drip irrigation for water efficiency.

21. Describe the cultivation of onion under the following heads:

- a) Selection of soil and preparation**
- b) Two improved varieties**
- c) Preparation of nursery and seed rate per hectare**
- d) Manure and fertilizer per hectare**
- e) Time of irrigation and method**

Solution: a) Selection of soil and preparation: Well-drained sandy loam with pH 6.0-7.5; avoid saline/acidic soils. Plough 2-3 times to fine tilth, incorporate 20-25 tons/ha FYM in last ploughing; prepare raised beds (90-120 cm wide).

b) Two improved varieties: Arka Khyati (hybrid, red bulb, high yield) and Pusa Red (multiplier, disease-resistant).

c) Preparation of nursery and seed rate per hectare: Raise nursery in October-November (Rabi); sow seeds 1 cm deep in lines 5-7.5 cm apart on beds with FYM. Seed rate: 8-10 kg/ha for transplanting (transplant 6-8 week old seedlings).

d) Manure and fertilizer per hectare: 20-25 tons/ha FYM basal. NPK: 100-120 kg N, 50-60 kg PO, 50-60 kg KO; half N basal, rest in splits; add 40 kg/ha ZnSO.

e) Time of irrigation and method: Irrigate at transplanting and every 7-10 days; light irrigation initially, frequent during bulb formation. Use drip/sprinkler to prevent waterlogging; stop 10 days before harvest.

Quick Tip

Onion is sensitive to water stress during bulb development; maintain consistent moisture with drip irrigation.

22. Describe the cultivation of bottlegourd under the following heads:

- a) Selection of soil and preparation**
- b) Two improved varieties**
- c) Time of sowing and seed rate per hectare**
- d) Manure and fertilizer per hectare**

e) Time of irrigation and method

Solution: a) Selection of soil and preparation: Sandy loam rich in organic matter, pH 6.5-7.5, good drainage. Plough 2-3 times to fine tilth, incorporate 20-25 tons/ha FYM; prepare raised beds or furrows 2-3 m apart.

b) Two improved varieties: Pusa Summer Prolific Long (high yield, long fruits) and Pusa Naveen (early, prolific bearer).

c) Time of sowing and seed rate per hectare: Sow in February-March (summer) or June-July (rainy); seed rate: 5-6 kg/ha, sow 2-3 seeds/hill at 1-1.5 m plant spacing.

d) Manure and fertilizer per hectare: 20-25 tons/ha FYM basal. NPK: 100 kg N, 50 kg PO, 50 kg KO; half N basal, rest at 30 and 50 DAS.

e) Time of irrigation and method: Irrigate immediately after sowing; every 5-7 days in summer, less in rainy season (total 8-9 irrigations). Use furrow or drip method; avoid waterlogging.

Quick Tip

Bottlegourd vines need support; use trellising for better fruit quality and yield.