9.Production of Food from Plants

TEACHING TASK (Page 19 - 21)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) C) More than 180 days

Long-term crops, such as jowar and red gram, typically require more than 180 days for growth and harvesting.

2) B) Maize

Maize is a Kharif crop, sown during the monsoon season (June to October) in India.

3) B) June to October

The rainy season in India, also known as the monsoon season, occurs from June to October.

4) B) Winter

Rabi crops, such as wheat and barley, are cultivated during the winter season (October to April) due to suitable cooler temperatures.

5) C) Monsoon

The term "Kharif" in Arabic refers to the monsoon season, when these crops are grown.

6) C) Flowering mechanism

The timing of crop production is largely influenced by the flowering mechanism, which depends on environmental factors like day length and temperature.

7) Short night durations

Long Day Plants require longer daylight hours (short nights) to initiate flowering.

8) Wheat

Wheat, a Short-Day Plant, thrives in longer night durations, typically during the winter season.

9) Long night durations

Short Day Plants, like rice and soybean, require longer nights to trigger flowering.

10) They flower regardless of night duration

Day Neutral Plants, such as cotton, flower irrespective of night length, depending on other growth milestones.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Cumin, C) Cardamom

Cumin and cardamom are spices grown in India, while wheat and millets are grains, not spices.

12) Cotton, e) Sugarcane

Cotton and sugarcane are major cash crops in India, grown for commercial purposes. Rice, wheat, and pulses are primarily food crops.

13) Karnataka, B) Kerala, C) Tamil Nadu, e) Andhra Pradesh

Coffee is primarily cultivated in southern states like Karnataka, Kerala, Tamil Nadu, and Andhra Pradesh, but not significantly in Uttar Pradesh.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

India's diverse agro-climatic conditions (temperature, rainfall, soil types) allow for a wide variety of crops, and the assertion correctly explains this diversity.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Long-term crops (e.g., jowar, red gram) require over 180 days, while short-term crops take around 100 days, justifying their separate categorization.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Seasonal variations dictate the availability of fruits and vegetables, as different crops thrive in specific seasons, affecting their abundance or scarcity.

Matrix Matching Type

17) Wheat → A. Requires short night durations for flowering (Wheat is a Short-Day Plant).

Maize → C. Flowers when nights are longer than 12 ½ hours (Maize is a Short-Day Plant).

Soybean → C. Flowers when nights are longer than 12 ½ hours (Soybean is a Short-Day Plant).

Cotton → D. Can flower regardless of night duration (Cotton is a Day Neutral Plant).

Comprehension Type

18) i. **C) Paddy (rice)**

Paddy is highlighted as adaptable to both Rabi and Kharif seasons due to its versatility. ii. **B) Monsoon rains**

Monsoon rains replenish water sources during the Kharif season, aiding paddy cultivation. iii. **A) By employing innovative irrigation techniques**

During the Rabi season, farmers use irrigation methods like canals or groundwater to overcome drier conditions.

LEARNERS TASK (Page 21 – 23)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) Wheat

Wheat is a staple crop in northern states like Punjab and Haryana, especially during the Rabi season.

2) Northern states

Basmati rice is primarily cultivated in northern states like Punjab, Haryana, and Uttar Pradesh.

3) Pearl millet

Pearl millet (bajra) is commonly grown in drier regions of India due to its drought tolerance.

4) Rajasthan

Uttar Pradesh, Maharashtra, and Tamil Nadu are major sugarcane producers, but Rajasthan is not a significant producer.

5) Gujarat

Gujarat is a major producer of cotton, a key cash crop.

6) Mustard

Mustard is a primary oilseed crop grown in northern states like Rajasthan and Uttar Pradesh.

7) Assam

Assam is a major tea-producing state in India, known for its tea plantations.

8) Tamil Nadu

Tamil Nadu, along with Karnataka and Kerala, is a prominent coffee-producing state.

9) Saffron

Saffron is not commonly produced in India on a large scale, though it is grown in limited areas like Jammu and Kashmir.

10) Long-term crops

Long-term crops, like jowar and red gram, require a longer duration (over 180 days) for harvesting.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Rice, C) Sugarcane, D) Jowar, E) Cotton, F) Turmeric

These crops are commonly cultivated during the Kharif season due to their reliance on monsoon rains.

12) Jowar, D) Black gram, E) Chickpeas

Jowar, black gram, and chickpeas are long-term crops requiring over 180 days for harvesting.

13) Wheat, D) Barley, E) Coriander

Wheat, barley, and coriander are Rabi crops, grown during the winter season. Paddy and maize are primarily Kharif crops.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Kharif crops are grown during the rainy season (June to October), and examples like paddy, sugarcane, and cotton rely on monsoon water.

15) Assertion is true, but Reason is false.

Rabi crops are grown during winter (October to April), but maize is primarily a Kharif crop, not a Rabi crop, making the reason false.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Flowering mechanisms, such as responses to night duration, determine optimal crop cultivation timing for proper yield.

Matrix Matching Type

17) Wheat → B. Rabi Season (Wheat is a winter crop).

Paddy (rice) → C. Both Rabi and Kharif Seasons (Paddy is versatile and grown in both seasons).

Cotton → A. Kharif Season (Cotton is primarily a Kharif crop).

Maize → A. Kharif Season (Maize is a Kharif crop).

Comprehension Type

18) i. **A) Mangoes, watermelons, and papayas**

These fruits are abundant in summer due to their preference for warm conditions.

ii. **B) Carrots, potatoes, and beets**

These root vegetables thrive in the cooler autumn season.

iii. **C) Oranges, lemons, and grapefruits**

Citrus fruits are associated with the winter season due to their cold tolerance.

TEACHING TASK (Page 29 - 31)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) By flooding the nursery

For paddy, the seed bed is prepared by flooding the nursery to create ideal conditions for germination.

2) To facilitate even sowing of seeds

Levelling the soil ensures uniform seed distribution and consistent crop growth.

3) Wooden plough

The wooden plough is a traditional tool used for ploughing in paddy cultivation.

4) All of the above

Paddy seeds can be sown by broadcasting, using a seed drill, or transplanting seedlings, depending on the method.

5) To guarantee a high yield

High-quality seeds are selected to ensure better germination and higher crop yields.

6) By soaking them in water

Farmers traditionally select seeds by soaking them in water to separate viable (sinking) seeds from non-viable (floating) ones.

7) To soften their outer shell

Soaking seeds helps soften the outer shell, aiding germination.

8) They are less likely to germinate

Floated seeds are typically non-viable and less likely to germinate, so they are removed.

9) It reduces labor costs

A paddy planter automates seedling planting, reducing labor requirements.

10) SRI Vari

System of Rice Intensification (SRI) varieties require more space between plants to optimize growth.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Soaking seeds in water, B) Sprouting seeds, C) Removing floated seeds

These are common seed preparation methods to ensure healthy germination.

12) Preparing the Soil, B) Sowing of seeds, C) Applying manure, D) Crop harvesting, e) Weeding

These practices are essential for both Kharif and Rabi crops to ensure successful cultivation.

13) Soaking seeds in water, B) Removing floated seeds, C) Sprouting seeds

These steps are part of the seed selection process to identify high-quality seeds.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Paddy's global significance as a staple food is due to its widespread consumption, as explained.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Historical evidence from the Mesolithic period and Harappan civilization supports paddy's long-standing agricultural importance.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

India's lower paddy yield per hectare is due to varied practices, limited technology, and diverse climates.

Matrix Matching Type

17) Water Test → C. Soaking seeds to soften their outer shell (Water test aids germination).

Traditional Seed Preservation → D. Selecting high-quality seeds based on specific criteria (Traditional methods focus on quality).

Chemical Treatment → B. Instrument used for uniform seed sowing (Chemical treatment is unrelated to sowing instruments; this seems misaligned in the question, but chemical treatment is not described as sowing-related).

Broadcast Seeding → A. Seeds are scattered by hand (Broadcasting involves hand-scattering).

Comprehension Type

18) i. **B) Warm tropical wetlands**

Paddy is traditionally associated with warm tropical wetlands due to its water-intensive nature.

ii. **C) From Rajasthan to Arunachal Pradesh and from Kerala to Jammu and Kashmir**

Paddy is cultivated across India in both Kharif and Rabi seasons.

iii. **C) China, Japan, and Australia**

Paddy is grown in cooler temperate regions in these countries, besides tropical areas.

LEARNERS TASK (Page 31 – 34)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) Rice (Paddy)

Rice is known as the "Global grain" due to its widespread consumption as a staple food.

2) Prominent during the Harappan civilization

Paddy cultivation has historical significance, notably during the Harappan civilization (2300 B.C.).

3) Across India, from Rajasthan to Arunachal Pradesh

Paddy is grown as both Kharif and Rabi crops across diverse Indian regions.

4) India

India has the largest area dedicated to paddy cultivation globally.

5) All of the above

Ploughing softens the soil, removes weeds, and prepares it for planting.

6) To sow seeds uniformly in the soil

A seed drill ensures uniform sowing for better crop growth.

7) Reliance on market-bought seeds

Traditional seed preservation is declining due to increased dependence on commercial seeds.

8) To provide nutrients to the crops

Manure is applied to enrich the soil with nutrients for crop growth.

9) By using a paddy planter

A paddy planter ensures proper spacing during transplanting.

10) Soaking seeds in water

Soaking seeds in water is a traditional method to select viable seeds.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Loosens the soil, C) Promotes the growth of earthworms, E) Allows roots to penetrate deeply

Ploughing loosens soil, encourages earthworm activity, and aids root penetration.

12) Ensures a healthy crop, C) Promotes uniform crop growth, E) Reduces the risk of pest infestation

Seed selection ensures healthy, uniform crops with reduced pest risks.

13) Seed drill, C) Hand planting, E) Seed planter

These methods ensure uniform seed sowing in the soil.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Proper soil preparation ensures air, water, and nutrient availability for healthy crop growth.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Selecting wrinkle-free, heavier seeds ensures successful germination and robust crops.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

GM seeds raise concerns about dependency, environmental impacts, and reduced diversity.

Matrix Matching Type

17) Ploughing and Applying Manure → A. Loosens the soil and aids in transportation of air and water

Levelling the Soil → D. Bundles seedlings for replanting in the field (This seems misaligned; levelling is for uniform sowing, not bundling seedlings).

Seed Selection Process → B. Removes floated seeds which are less likely to germinate

Transplanting Seedlings → D. Bundles seedlings for replanting in the field (Correct match).

Comprehension Type

18) i. **C) To maximize yield and ensure food security**

Agricultural practices aim to enhance productivity and food security.

ii. **C) Either using traditional manpower or modern tools**

Practices can be carried out using both traditional and modern methods.

iii. **C) Because agricultural practices are adaptable across different crop seasons and contexts**

These practices are versatile and applicable to various crops, not just paddy.

TEACHING TASK (Page 38 - 40)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) Plow

A plow is used to apply manure by mixing it into the soil during preparation.

2) To provide essential nutrients

Manure supplies nutrients like nitrogen, phosphorus, and potassium to crops.

3) Whitefly

Whiteflies are known to carry viral infections in crops.

4) Environmental damage

Excessive pesticide use can lead to soil, water, and ecosystem damage.

5) Kharif

Deccan wingless grasshoppers are commonly seen during the Kharif season due to favorable conditions.

6) Removing affected leaves and burning them

This practice helps control pests by eliminating infected plant parts.

7) Brown spots on leaves

Brown spots are a common symptom of bacterial infections in plants.

8) Need for pesticide rotation

Pest resistance to pesticides necessitates rotating different types to maintain effectiveness.

9) Eating harmful insects

Wasps and ladybugs are beneficial insects that prey on harmful pests.

10) Inorganic manure

Inorganic manure is enriched with nitrogen, phosphorus, and potassium, unlike natural manure.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Moth caterpillars, B) Paddy beetles, C) Paddy grasshoppers, D) Aphidi

These pests are commonly attracted to paddy crops.

12) White spots, B) Black spots, C) Yellow spots, D) Fluffy or powdery coating

These are typical symptoms of fungal infections on plant leaves.

13) Sun exposure, C) Pesticide use

Sun exposure and pesticide use help control pests, while ploughing and manuring are not directly pest-related.

Reason and Assertion Type

14) C) Assertion is true, but Reason is false.

While removing affected leaves is a valid pest control method, leaving them under the plant or in the field can spread pests, making the reason false.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Pests develop resistance due to repeated, unwise pesticide use, requiring rotation.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Extensive pesticide use harms beneficial insects and causes environmental damage.

Matrix Matching Type

17) Pest-Plant Associations → C. Harmful Associations

Types of Pesticides → D. Plant-Derived Pesticides

Manuring Practices → B. Application Tools

Types of Manure → A. Artificial Manure (Note: Artificial manure aligns with chemical fertilizers).

Comprehension Type

18) i. **C) Improved crop yields**

Over-fertilization does not improve yields; it harms soil and crops.

ii. **C) It makes the soil too acidic or too alkaline**

Excessive fertilization disrupts soil pH, making it unsuitable for growth.

iii. **C) Harm to farmers and reduced soil fertility**

Over-fertilization leads to soil degradation and reduced fertility.

LEARNERS TASK (page 40 - 42)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) Caterpillars

Caterpillars are common pests attracted to paddy crops.

2) Powdery spots on leaves

Powdery spots are a typical symptom of fungal infections.

3) Neem

Neem is a natural, plant-derived pesticide.

4) Water pollution

Overdosing manure can lead to water pollution due to nutrient runoff.

5) Natural manure

Natural manure is formed by decomposing plant and animal wastes.

6) By exposing pest eggs and larvae to sunlight

Ploughing and sun exposure kill pest eggs and larvae by exposing them to sunlight.

7) Crumpled leaves

Crumpled leaves are a symptom of aphid infestation.

8) Natural fertilizer

Neem and chrysanthemum-based fertilizers are natural, plant-derived fertilizers.

9) Caterpillar

Caterpillars are commonly attracted to wheat, paddy, and sugarcane.

10) To control pest populations

Pesticides are primarily used to manage pest populations.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) B) Plow, C) Spade, D) Manure spreader

These tools are used for applying manure to crops.

12) Natural manure (Bio fertilizers), C) Compost, D) Vermicompost

These are types of manure used in agriculture; artificial manure refers to chemical fertilizers.

13) Soil pollution, B) Water pollution, C) Altered pH balance of the soil, D) Reduced soil fertility

Overdosing manure causes these environmental and soil issues.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Proper manuring replenishes nutrients, preventing soil infertility.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Overdosing manure causes pollution and reduces fertility, as explained.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Different crops require specific pesticides to manage their unique pest challenges.

Matrix Matching Type

17) Common Agricultural Pests → B. Desert Locusts

Environmental Impact of Pesticides → A. Extensive Environmental Damage

Natural Manure → D. Formed by decomposing plant and animal wastes

Artificial Manure → C. Manufactured in factories and enriched with Nitrogen, Phosphorus, and Potassium

Comprehension Type

18) i. **C) Some pesticides target specific pests, while others harm beneficial insects**

This accurately reflects the environmental impact of pesticides.

ii. **C) Disruption of natural habitats**

Extensive pesticide use disrupts ecosystems and habitats.

iii. **C) By adopting sustainable pest management practices**

Sustainable practices reduce environmental damage from pesticides.

TEACHING TASK (Page 46 - 48)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) Chain pumps

Chain pumps were an ancient method for lifting water from wells using human labor.

2) To conserve water

Modern irrigation methods aim to minimize water wastage.

3) Drip irrigation

Drip irrigation delivers water directly to plant roots, drop by drop.

4) Water and nutrients

Weeds compete with crops for water and nutrients, reducing crop growth.

5) To increase crop yield

Weeding removes competition, improving crop yield.

6) Mulching, C) Uprooting and using weedicides

These are common weeding methods mentioned in the text.

7) Weedicides

Weedicides are chemicals used to selectively kill weeds.

8) To collect matured crops

Harvesting involves collecting mature crops for use or sale.

9) Threshing

Threshing is the process of separating grains from dry plant stalks.

10) Manual harvesting using sickles

Manual harvesting with sickles is a common method for paddy.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Separating grains from chaff, C) Collecting grains for storage

Threshing separates grains from chaff and prepares them for storage.

12) Jute bags, D) Metallic bins

These are mentioned as storage containers for grains.

13) To reduce moisture content, B) To prevent mold formation

Drying grains reduces moisture and prevents mold, ensuring safe storage.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Proper storage protects grains from pests, fungi, and moisture, maintaining quality.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Modern irrigation methods like drip systems conserve water by precise delivery.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Weeding removes potential pest hosts, reducing disease and pest spread.

Matrix Matching Type

17) Glyphosate → B. Broad-spectrum weed control

Atrazine → C. Selective control of broadleaf weeds

Paraquat → B. Broad-spectrum weed control

Pendimethalin → D. Pre-emergent weed control

Comprehension Type

18) i. **B) Fungi, pests, rodents, and bacteria**

Grains are protected from these threats during storage.

ii. **B) It promotes the growth of molds**

Moisture encourages mold growth, which damages grains.

iii. **C) Rendering them unsuitable for consumption**

Mold contamination makes grains unfit for consumption.

LEARNERS TASK (Page 49 - 50)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) To water crop plants in the field

Irrigation's primary purpose is to provide water to crops.

2) Ponds

Ponds are not listed as a common irrigation water source in the text (wells, canals, rivers are).

3) Basin irrigation

Basin irrigation, involving flooding fields, is suitable for paddy.

4) Clearing water flow barriers

Clearing barriers ensures efficient water flow in irrigation.

5) Waterlogging

Excess water in irrigation can cause waterlogging, harming crops.

6) By pouring grains from a height

Winnowing involves pouring grains from a height to separate them from chaff.

7) Storing grains in jute bags

Jute bags are a common household grain storage method.

8) To reduce moisture content

Drying grains prevents spoilage by reducing moisture.

9) Plastic bags

Plastic bags are not mentioned as storage containers in the text.

10) Vegetables and fruits

Cold storage units are used for perishable items like vegetables and fruits.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) A) Manual uprooting, B) Use of weedicides

These are the weed removal methods mentioned in the text.

12) Garika, C) Varipilla Gaddi

These are common weeds found in paddy fields.

13) Manual harvesting, B) Mechanized harvesting, C) Harvesting with sickles

These are the harvesting methods mentioned.

Reason and Assertion Type

14) A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Irrigation ensures water supply for crop growth and productivity.

15) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Weeding eliminates competition, promoting healthier crops.

16) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

Manual harvesting uses handheld tools, while mechanized harvesting uses machines.

Matrix Matching Type

17) Furrow Irrigation → B. Wheat and Maize

Basin Irrigation → D. Paddy

Sprinkler Irrigation → C. Vegetables and Flowers

Drip Irrigation → A. Vineyards and Orchards

Comprehension Type

18) i. **C) To promote water conservation and efficient irrigation**

Subsidies aim to encourage water-saving irrigation methods.

ii. **B) By minimizing water usage and ensuring precise watering**

Sprinklers and drip systems reduce wastage through precise delivery.

iii. **C) Improved crop yields and sustainability in agriculture**

These systems enhance yields and promote sustainable farming.