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FOR HARYANA CLASS 11 PREPARATION

# HBSE Class 11 Sample Paper 2027 Agriculture Marking Scheme

| EXAM | YEAR | TYPE | SUBJECT |
| --- | --- | --- | --- |
| Haryana Class 11 | 2027 | Answer Key | Agriculture |

# Class 11 Agriculture (Code 815) – Model Question Paper 2026–27

## Answer Key & Marking Scheme

**SECTION A – OBJECTIVE TYPE QUESTIONS (15 Marks)**

### Multiple Choice Questions

| Q. No. | Answer |
|---|---|
| 1 | (b) Barometer |
| 2 | (c) Crossing over |
| 3 | (a) Pure line selection |
| 4 | (c) Carbohydrates |
| 5 | (a) Rhizobium |
| 6 | (c) Feed containing all nutrients in proper proportion |

### Fill in the Blanks

| Q. No. | Answer |
|---|---|
| 7 | Condensation |
| 8 | Deoxyribonucleic Acid |
| 9 | Poultry |

### One Word Answer

| Q. No. | Answer |
|---|---|
| 10 | Gene |
| 11 | Leeuwenhoek |
| 12 | Pollination |

### Assertion–Reason

| Q. No. | Answer |
|---|---|
| 13 | Both A and R are true and R is the correct explanation of A |
| 14 | A is true but R is false |
| 15 | Both A and R are true and R is the correct explanation of A |

**Total = 15 Marks**

## SECTION B – VERY SHORT ANSWER QUESTIONS (2 Marks Each)

**Q16. Define lapse rate.**

**Answer:** The rate at which atmospheric temperature decreases with increase in altitude is called lapse rate.

**OR**

**What is temperature inversion?**

Temperature inversion is a condition in which temperature increases with height instead of decreasing.

**Q17. State any two Mendelian laws of inheritance.**

**Answer:**

1. Law of Segregation.
2. Law of Independent Assortment.

**OR**

**Differentiate between mitosis and meiosis.**

| Mitosis | Meiosis |
|---|---|
| One division | Two divisions |
| Produces two daughter cells | Produces four daughter cells |

## Q18. What is apomixis?

**Answer:** Apomixis is seed formation without fertilization.

Advantage: Produces genetically identical plants.

**OR**

**What is micropropagation?**

Micropropagation is rapid multiplication of plants through tissue culture techniques.

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## Q19. Define enzyme.

**Answer:** Enzymes are biological catalysts that accelerate biochemical reactions.

Function: Increase rate of metabolic reactions.

**OR**

**What are amino acids?**

Amino acids are the basic structural units of proteins.

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## Q20. What is biofertilizer?

**Answer:** Biofertilizers are living microorganisms that enhance soil fertility.

Example: Rhizobium.

**OR**

**Define mycorrhiza.**

Mycorrhiza is a symbiotic association between fungi and plant roots.

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## Q21. What is artificial insemination?

**Answer:** Artificial insemination is the introduction of semen into the reproductive tract of a female animal by artificial methods.

**OR**

**Define balanced ration.**

Balanced ration is a feed containing all nutrients in proper proportion to meet the animal's requirements.

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## SECTION C – SHORT ANSWER QUESTIONS (3 Marks Each)

### Q22. Explain the importance of monsoon in Indian agriculture.

### Answer:

1. Supplies water for crop growth.
2. Recharges groundwater resources.
3. Influences cropping pattern and productivity.

### Q23. Describe mutation and its significance in crop improvement.

**Answer:** Mutation is a sudden heritable change in genetic material.

Importance:

1. Creates genetic variability.
2. Develops disease-resistant varieties.
3. Produces high-yielding crop varieties.

**Q24. Explain any three applications of recombinant DNA technology.**

### Answer:

1. Development of transgenic crops.
2. Production of disease-resistant varieties.
3. Improvement of crop yield and quality.

### OR

### Explain somaclonal variation and its importance.

### Answer:

Somaclonal variation refers to genetic variation among plants regenerated from tissue culture.

Importance:

1. Source of useful variability.
2. Disease resistance.
3. Stress tolerance improvement.

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**Q25. Discuss the classification of carbohydrates with examples.**

**Answer:**

1. Monosaccharides – Glucose.
2. Disaccharides – Sucrose.
3. Polysaccharides – Starch.

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## Q26. Explain the role of microorganisms in the nitrogen cycle.

**Answer:**

1. Convert atmospheric nitrogen into usable forms.
2. Decompose organic matter.
3. Improve soil fertility.

**Marking:**

- Any three points = 1 Mark each

**OR**

**Differentiate between symbiotic and asymbiotic nitrogen fixation.**

| Symbiotic | Asymbiotic |
|---|---|
| In association with plants | Free living |
| Example: Rhizobium | Example: Azotobacter |

**Q27. Describe the care and management of newly born calves.**

**Answer:**

1. Feeding colostrum immediately after birth.
2. Proper housing and hygiene.
3. Vaccination and disease prevention.

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## SECTION D – ESSAY TYPE QUESTIONS (5 Marks Each)

**Q28. Discuss the causes of climate change and its impact on agriculture.**

**Answer:**

## Causes:

1. Greenhouse gas emissions.
2. Deforestation.
3. Industrialization.
4. Burning of fossil fuels.
5. Urbanization.

## Impact on Agriculture:

1. Reduced crop yield.
2. Increased pest incidence.
3. Drought and floods.
4. Change in cropping patterns.
5. Soil degradation.

## OR

## Explain different types of precipitation and their agricultural importance.

**Answer:** Types:

1. Rain
2. Snow
3. Sleet
4. Hail

Importance:

- Provides water for crops.
- Maintains soil moisture.
- Recharges water resources.

**Q29. Describe various methods of plant breeding used in self-pollinated and cross-pollinated crops.**

## Answer: Self-pollinated crops:

1. Mass selection.
2. Pure line selection.

## Cross-pollinated crops:

1. Recurrent selection.
2. Hybridization.

3. Progeny testing.

## OR

## Explain the concept, scope and applications of plant biotechnology.

## Marking Scheme:

- Concept = 1 Mark
- Scope = 2 Marks
- Applications = 2 Marks

## Key Points:

- Tissue culture
- Genetic engineering
- Disease resistance
- Crop improvement
- Micropropagation

**Q30. Discuss the importance of livestock in Indian economy and explain principles of animal nutrition and feeding practices.**

## Answer:

## Importance:

1. Source of milk, meat and eggs.
2. Employment generation.
3. Contribution to GDP.
4. Source of manure.

## Animal Nutrition:

1. Balanced ration.
2. Adequate water supply.
3. Mineral supplementation.
4. Proper feeding schedule.

## OR

## Describe important diseases of livestock and poultry, their symptoms and management.

## Expected Diseases:

- Foot and Mouth Disease (FMD)
- Mastitis
- Ranikhet Disease
- Coccidiosis