

Marking Scheme
Strictly Confidential
(For Internal and Restricted use only)
Senior Secondary School Examination, 2026 (XIIth)
SUBJECT NAME: - AGRICULTURE (Q.P. CODE: 332)

General Instructions: -

1	The CBSE has decided to introduce On Screen Marking (OSM) for the evaluation of Class XII answer Book with the 2026 Examination.
2	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully.
3	“Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, evaluation done and several other aspects. Its leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in Newspaper/Website, etc. may invite action under various rules of the Board and IPC.”
4	Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In Class-XII, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded.
5	The Marking scheme carries only suggested value points for the answers. These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly.
6	The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
7	Evaluators will mark(✓) wherever answer is correct. For wrong answer CROSS 'X' be marked. Evaluators will not put right (✓) while evaluating which gives an impression that answer is correct and no marks are awarded. This is most common mistake which evaluators are committing.
8	If a question has parts, please award marks on the right-hand side for each part in the OSM Portal. Marks awarded for different parts of the question will be totaled up by the OSM System.
9	If a question does not have any parts, marks must be awarded in the left-hand margin in the OSM Portal. This may also be followed strictly.
10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.

11	A full scale of marks 60 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines). This is in view of the reduced syllabus and number of questions in question paper.
13	Ensure that you do not make the following common types of errors committed by the Examiner in the past:- <ul style="list-style-type: none"> • Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.) • Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
14	While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks.
15	The Examiners should acquaint themselves with the guidelines given in the "Guidelines for Spot Evaluation" before starting the actual evaluation.
16	The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.
17	If a candidate attempts both alternatives/options in a question where only one option/ alternative is required to be attempted, the Evaluator shall award marks in both the options. The system will take the higher of two scores and disregard the other response.
18	In a question having two options/alternatives, if a candidate has attempted only one, then the evaluator shall mark "NA" (Not attempted) against the option that has not been attempted by the candidate.

Series: SR3PQ

Set- 4
Q P Code: 332(P3320808)

Senior Secondary School Certificate Examination-2026
Marking Scheme – AGRICULTURE (Subject Code-808)

Max. Time: 3 Hours

Max. Marks: 60

SECTION A		
(Objective Type Questions)		
Expected Outcomes/Value Points		
Q 1	Answer any 4 out of the given 6 questions on Employability skills (4x 1 = 4 marks)	Marks
i	(A) Listening	1
ii	(C) Deadlines	1
iii	FFM stands for <u>Five Factor Model</u> of individual's personality. In relation to personality disorders, the FFM is used to understand the transition from normal personality variations to dysfunctional, rigid, and unhealthy patterns.	1
iv	(D) Cell	1
v	Ourselves, abilities	1
vi	Roof top rainwater harvesting refers to the process where rainwater is collected in the tanks to be used later.	1

Q. 2	Answer any 5 out of the given 7 questions (5x 1 = 5 marks)	
i	Food preservation contributes to food security by extending the shelf life of food, which reduces waste, ensures year-round availability and facilitates food distribution. This creates a stable and reliable food supply.	1
ii	Swarming is the natural way a honeybee colony reproduces. It happens when a large group of worker bees and the old queen leave their hive to establish a new one.	1

iii	Vitamin C	1
iv	Minimum of 45% fruit, by weight.	1
v	Aonla or Pineapple or Bael or Apple or Pear or Mango or Cherry or Karonda or Strawberry or Papaya. (Any one)	1
vi	Soil drainage is important because it prevents waterlogging, ensures roots get enough oxygen, helps avoid root rot and allows proper nutrient uptake for healthy plant growth. (Any one)	1
vii	A Hi-Tech Nursery provides healthy, disease-free seedlings with higher survival rates, ensures year-round production and reduces resource costs. It increases farmer profits, market competitiveness and offers faster returns on investment. (Any one)	1

Q. 3	Answer any 6 out of the given 7 questions	(6 x 1 = 6 marks)
i	Manure has a wide range of nutrients in low, unstandardized concentrations, which are released slowly. Fertilizer has high, precise concentrations of specific nutrients, which are immediately available to plants.	1
ii	Ministry of Food Processing Industries (MoFPI)	1
iii	Ventilation openings in wooden crates allow air circulation, which prevents heat and moisture buildup, reduces spoilage, and keeps fruits and vegetables fresh.	1
iv	7	1
v	Air/ atmosphere surrounding fruit	1
vi	Pickle	1
vii	Soil testing	1

Q.4	Answer any 5 out of the given 6 questions	(5 x 1 = 5 marks)
i	The purpose of a Zero Energy Cool Chamber (ZECC) is to extend the shelf life of fruits and vegetables by providing low-cost, eco-friendly cooling. It reduces temperature and maintains high humidity without electricity, thereby minimizing weight loss, wilting, and spoilage after harvest. (Any One)	1
ii	350 ppm	1
iii	ATP / ADP	1
iv	Dhaincha, Lobia and Sun hemp are mostly used for green manuring. (Any One)	1
v	Sodium Benzoate or Potassium metabisulphite	1
vi	Sikkim	1

Q.5	Answer any 5 out of the given 6 questions	(5 x 1 = 5 marks)
i	Oilseed	1
ii	Any One method a) Vacuum packaging , where air is removed from the package to prevent oxygen exposure. b) Modified Atmosphere Packaging (MAP) – replacing oxygen with gases like CO ₂ or N ₂ . c) Oil covering	1
iii	Honey	1
iv	Drip irrigation	1
v	HACCP: Hazard Analysis and Critical Control Point	1
vi	Secondary processing of cereals includes the following processes: fermentation, baking, puffing, flaking, frying and extrusion. (Any one)	1

Q.6	Answer any 5 out of the given 6 questions	(5 x 1 = 5 marks)
i	Nitrogen, Phosphorus, Potassium, Calcium, Magnesium and Sulphur (Any one)	1
ii	Post harvest	1
iii	Pickle	1
iv	Queen bee	1
v	True	1
vi	To avoid the shade effect on other crops.	1

SECTION B

SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability skills (3 x 2 = 6 marks)

Answer each question in 20-30 words

Q. 7	Four barriers are : a) Physical barrier b) Psychological barrier c) Linguistic and cultural barrier d) Personal factors e) Noise and visual distractions (Any four)	4 x ½=2
Q. 8	Personality development is the development of an organised pattern of behaviours and attitudes that makes a person distinctive. It occurs by the ongoing interaction of temperament, character and environment. (Any other relevant definition)	2
Q. 9	Electronic spreadsheets have many options to make the context look neat and easy to read. This is called formatting.	1+1=2

	<p>Example</p> <ul style="list-style-type: none"> i. Aligning the text ii. Highlighting the text iii. Font size iv. Text wrapping v. Font colour vi. Underlining <p>(Any other relevant formatting options)</p>	
Q. 10	<p>(i) They provide their expertise in services to create a market for technical entrepreneur</p> <p>(ii) They are not concerned with the manufacturing process but have more to do with before and after the manufacturing process.</p>	2x1=2
Q. 11	<p>Green workers services include :</p> <ul style="list-style-type: none"> (i). Electricians – who install solar panels (ii). Plumbers – who install solar water heaters (iii). Construction workers – who build energy-efficient green buildings. (iv). Technicians and workers – involved in establishing wind power farms and those working for clean and renewable energy development. <p>(Any other relevant point)</p>	4 x ½ =2

Answer any 3 out of the given 5 questions in 20-30 words each (3 x 2 = 6 marks)

Q. 12	<p>The critical stages of irrigation are specific crop growth phases (like flowering, grain filling, fruit setting) when water is most essential. Stress at these stages causes major yield loss, so timely irrigation ensures better yield and water-use efficiency.</p> <ul style="list-style-type: none"> i. Wheat: Crown root initiation, tillering, jointing,. booting, flowering, milk and dough stages (Any one) ii. Maize: Early vegetative, taselling and silking stage. (Any one) 	1+1=2
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Q. 13	Tips for storage of high quality horticultural produce (Any two) <ul style="list-style-type: none"> a) Store only high quality produce, free of damage, decay and of proper maturity (not over ripe or under-mature). b) Knowledge of the appropriate storage conditions. c) Avoid lower than recommended temperatures in storage, because many commodities are susceptible to damage from freezing or chilling. d) Do not over load storage rooms or stack containers closely. e) Provide adequate ventilation in the storage room. f) Keep storage rooms clean. g) Storage facilities should be protected from rodents by keeping the immediate outdoor area clean, and free from trash and weeds. h) Containers must be well ventilated and strong enough to with stand stacking. Do not stack containers beyond their stacking strength. i) Avoid storing ethylene sensitive commodities with those that produce ethylene. j) Avoid storing produce known for emitting strong odors (apples, garlic, onions, turnips, cabbages and potatoes) with odor-absorbing commodities. Inspect stored produce regularly for signs of injury, water loss, damage and disease. k) Remove damaged or diseased produce to prevent the spread of problems. 	1+1=2
Q. 14	a) Honey (Any two) <ul style="list-style-type: none"> i. Honey is a nutritious food, rich in energy and vitamins. ii. Medicines: It is used as a carrier in Ayurvedic and Unani medicines. It acts as a laxative and prevents cold, cough and fever. iii. It is used in religious ceremonies. iv. It goes in the making of alcoholic drinks and beauty lotions. v. Another important use is in scientific research for making bacterial cultures. vi. It is also utilised for making poison baits for certain insect pests. b) Bee wax (Any two) <ul style="list-style-type: none"> i. Making of candles (the modern candles are made of paraffin wax, a petroleum product) ii. Making pharmaceutical preparations 	2 x ½ + 2 x ½ =2

	<div>iii. Preparation of varnishes and paints</div> <div>iv. Water proofing and waxing of threads</div> <div>v. Formation of comb foundation (wax foundation in apiaries).</div>																																									
Q. 15	<div>Any two differences</div> <table><tr><th>Sr No</th><th>Characteristics</th><th>Manures</th><th>Fertilizer</th></tr><tr><td>1.</td><td>Origin</td><td>Plant or animal origin</td><td>Chemical synthesized or manufactured</td></tr><tr><td>2.</td><td>Nature</td><td>Organic in nature</td><td>Inorganic in nature</td></tr><tr><td>3.</td><td>Type</td><td>Natural product</td><td>artificial product</td></tr><tr><td>4.</td><td>Conc. Of nutrients</td><td>less concentrated</td><td>More concentrated</td></tr><tr><td>5.</td><td>Material</td><td>Supply organic matter</td><td>Supply inorganic matter</td></tr><tr><td>6.</td><td>Nutrient availability</td><td>slowly available</td><td>May or may not be readily available</td></tr><tr><td>7.</td><td>Nutrients</td><td>Supply all the primary nutrients including Micronutrient</td><td>Supply specific type of nutrients one, two or three. micro nutrients may or may not be present</td></tr><tr><td>8.</td><td>Effect on Soil Health</td><td>Improves physical condition of soil</td><td>Do not improve the physical condition of soil</td></tr><tr><td>9.</td><td>Effect on plant growth</td><td>No bad effect when applied in large quantities.</td><td>Adverse effect on plant whenever there is deficiency or excessive application</td></tr></table>	Sr No	Characteristics	Manures	Fertilizer	1.	Origin	Plant or animal origin	Chemical synthesized or manufactured	2.	Nature	Organic in nature	Inorganic in nature	3.	Type	Natural product	artificial product	4.	Conc. Of nutrients	less concentrated	More concentrated	5.	Material	Supply organic matter	Supply inorganic matter	6.	Nutrient availability	slowly available	May or may not be readily available	7.	Nutrients	Supply all the primary nutrients including Micronutrient	Supply specific type of nutrients one, two or three. micro nutrients may or may not be present	8.	Effect on Soil Health	Improves physical condition of soil	Do not improve the physical condition of soil	9.	Effect on plant growth	No bad effect when applied in large quantities.	Adverse effect on plant whenever there is deficiency or excessive application	2 x1 = 2
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Q. 16	<div>Common defects seen during jelly preparation and the primary reasons why they occur. (Any Two)</div> <div><div>i. Jelly is failed to set:- Jelly is failed to set due to addition of too much sugar, lake of acid the end-point, cooking below the end-point, cooking beyond the end-point and prolonged cooking.</div><div>ii. Cloudy or foggy jelly:- Cloudy or foggy jelly due to use of non-clarified juice or extract, use of immature fruits, over-cooking, non-removal of scum, faulty pouring and premature gelation.</div><div>iii. Formation of crystals in jelly:- Formation of crystals in jelly due to addition of excess sugar and also to over-concentration of jelly.</div><div>iv. Syneresis or weeping of jelly:- Syneresis or weeping of jelly is the phenomenon of spontaneous exudation of fluid from a gel is called syneresis and weeping and is caused by excess of acid, too low concentration of sugar, insufficient pectin, premature gelation and fermentation</div></div>	2 x 1 = 2																																								



Answer any 2 out of the given 3 questions in 30-50 words each (2 x 3 = 6 marks)

Q. 17	<p>Key features of formal style garden (Any three)</p> <p>(i) Garden is symmetrical with square, rectangular and road cut at right angles.</p> <p>(ii) It has enclosure/boundary</p> <p>(iii) Flower beds also in geometric design</p> <p>(iv) Planting arrangements of trees and shrubs in geometrical and kept in shape by trimming or training.</p> <p>Example</p> <p>a) Formal style – Rashtrapati Bhavan(Amrit Udhyan) (New Delhi, India)</p> <p>b) Informal style – Shantiniketan Gardens (West Bengal, India)</p> <p>c) Free style: Rose garden of Ludhiana</p> <p>(Any other suitable examples for each type of garden)</p>	<p>1½ + 3 x ½ =3</p>
Q. 18	<p>Factors Governing Soil Fertility</p> <p>A. Natural factors (Any three)</p> <ol style="list-style-type: none"> Parent material Topography Climate Depth of Soil Profile Physical Condition of Soil Soil Age Soil Erosion Nutrient status in Soil <p>B. Artificial Factors (Any three)</p> <ol style="list-style-type: none"> Waterlogging Cropping System Soil pH Soil Microorganisms Organic matter content in Soil Method and time of ploughing 	<p>6 x ½ =3</p>

Q. 19	Judging of End-Point of jam (Any three) <ol style="list-style-type: none"> Sheet or Flake test:-A small portion of jam is taken out during boiling, in a spoon or wooden ladle and cooled slightly; it is then allowed to drop. If the product falls off in the form of a sheet or flakes instead of flowing and a continuous stream or syrup, it means that the end-point has been reached and product is ready, boiling is continued till the sheet is positive. Temperature:- 105°C. TSS:- 68-70% Weight Test:- If total weight of jam is 1.5 time more than sugar weight, jam is prepared. 	3 x 1 =3
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Answer any 3 out of the given 5 questions in 50-80 words each (4 x 3 = 12 marks)

Q. 20	<table border="1"> <thead> <tr> <th>Point of comparison</th><th>Sprinkler Irrigation</th><th>Drip Irrigation</th></tr> </thead> <tbody> <tr> <td>Water conservation potential</td><td>Moderate – losses due to evaporation & wind drift</td><td>Very high – water applied directly to root zone, minimal loss</td></tr> <tr> <td>Crop suitability</td><td>Best for close-growing crops (wheat, groundnut, vegetables, lawns)</td><td>Best for widely spaced, high-value crops (fruits, grapes, sugarcane, cotton, vegetables)</td></tr> <tr> <td>Initial investment</td><td>Lower – moderate cost of pipes and sprinklers</td><td>Higher – costly installation of pipes, emitters, and filters</td></tr> <tr> <td>Impact on soil erosion & salinity</td><td>May cause runoff, erosion, and uneven salt deposition if mismanaged</td><td>Prevents erosion, reduces salinity hazard by maintaining uniform soil moisture</td></tr> </tbody> </table>	Point of comparison	Sprinkler Irrigation	Drip Irrigation	Water conservation potential	Moderate – losses due to evaporation & wind drift	Very high – water applied directly to root zone, minimal loss	Crop suitability	Best for close-growing crops (wheat, groundnut, vegetables, lawns)	Best for widely spaced, high-value crops (fruits, grapes, sugarcane, cotton, vegetables)	Initial investment	Lower – moderate cost of pipes and sprinklers	Higher – costly installation of pipes, emitters, and filters	Impact on soil erosion & salinity	May cause runoff, erosion, and uneven salt deposition if mismanaged	Prevents erosion, reduces salinity hazard by maintaining uniform soil moisture	4 x 1 =4
Point of comparison	Sprinkler Irrigation	Drip Irrigation															
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<p>Q. 21</p>	<p>Biofertilizer are defined as preparations containing living cells or latent cells of efficient strains of microorganisms that help crop plants for the uptake of nutrients by their interactions in the rhizosphere.</p> <p>Role of Biofertilizers in enhancing the soil fertility (Any three roles)</p> <ul style="list-style-type: none"> i. Fix atmospheric nitrogen and enrich soil fertility. ii. They can add 20-200 kg N/ha year under optimum soil conditions and thereby increases 15-30 percent of total crop yield iii. Solubilize phosphorus and mobilize potassium for plant use. iv. Some Biofertilizers (eg, <i>Rhizobium</i> BGA, <i>Azotobacter sp</i>) stimulate production of growth promoting substance like vitamin- B complex, Indole acetic acid (IAA) and Gibberellic acids etc. v. They improve physical properties of soil, soil tilth and soil health in general. vi. Improve soil health through organic matter decomposition and microbial activity. vii. Reduce dependence on chemical fertilizers, making farming sustainable and cost-effective. 	<p>1+3=4</p>
<p>Q. 22</p>	<p>(a) It is especially important for horticultural crops (fruits, vegetables, flowers) because they are highly perishable, have high moisture content, and are sensitive to mechanical injury, temperature, and microbial attack.</p> <p>(b) Post-harvest practices that extend the shelf life of produce (Any two)</p> <ul style="list-style-type: none"> i. Pre-cooling ii. Curing iii. Degreening iv. Sorting v. Grading vi. Waxing vii. Hot Water Treatment viii. Radiation Treatment 	<p>1+2+1=4</p>

	<p>ix. Vapour heat treatment (VHT)</p> <p>x. Fumigation</p> <p>xi. Storage / Refrigeration</p> <p>(c) Modern and traditional storage method used in rural India.</p> <p>Traditional Storage methods (Any One)</p> <p>a) Pit Storage</p> <p>b) Clamp Storage</p> <p>c) Barns Storage</p> <p>d) Cellars Storage</p> <p>e) Sand and Coir Storage</p> <p>f) High Altitude Storage</p> <p>g) Zero Energy Cool Chamber</p> <p>Modern Storage methods (Any One)</p> <p>a) Cold Storage</p> <p>b) Hypobaric Storage</p> <p>c) Controlled atmosphere (CA) storage</p> <p>d) Modified Atmospheric Storage (MA)</p>																			
Q. 23	<table border="1"> <thead> <tr> <th></th><th>Type of Packaging</th><th>Key Features / Uses</th></tr> </thead> <tbody> <tr> <td>1</td><td>Plastic film bags</td><td>Common for consumer-size packs in fruit and vegetable marketing.</td></tr> <tr> <td>2</td><td>Plastic boxes</td><td>Rigid containers; protect soft and delicate produce</td></tr> <tr> <td>3</td><td>Net / Mesh bags</td><td>Used for fruits like apple, citrus, guava, sapota</td></tr> <tr> <td>4</td><td>Sleeve packs</td><td>Hold fruits firmly; superior visibility; good sales appeal</td></tr> <tr> <td>5</td><td>Cling film</td><td>Low water vapour transmission, high gas</td></tr> </tbody> </table>		Type of Packaging	Key Features / Uses	1	Plastic film bags	Common for consumer-size packs in fruit and vegetable marketing.	2	Plastic boxes	Rigid containers; protect soft and delicate produce	3	Net / Mesh bags	Used for fruits like apple, citrus, guava, sapota	4	Sleeve packs	Hold fruits firmly; superior visibility; good sales appeal	5	Cling film	Low water vapour transmission, high gas	8 x ½ = 4
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			permeability; good for fresh produce wrapping.	
	6	Shrink / Stretch film	Specialized plastic packaging; shrink wrapping and stretch wrapping widely used.	
	7	Antimicrobial packaging	Packaging materials with antimicrobial coatings to reduce spoilage.	
	8	Wooden packaging	Traditional; used for packing fruits and vegetables during transport.	
	9	Bamboo mat holed boxes	Suitable for transporting apples	
	10	Polypropylene boxes	Durable, reusable, and suitable for long-distance markets.	
	11	Corrugated fibre board (CFB)	Economical, lightweight, widely used for fruits and vegetables.	
	12	Tetra-packaging	Aseptic cartons (multi-layered); safe, lightweight, and extend shelf life.	
Q. 24	(a) Features of the queen bee (Any three)			3+1 =4
Queen		Queen bee is the only perfectly developed female, that is has well developed ovaries and other organs of female reproductive system. She is largest in size. Its wings are smaller and are shrivelled. Mouth parts for sucking food are shorter than that of workers. No wax glands. Live for about 3 - 4 years. May lay eggs at the rate of 800 - 1500 per day.		
(b) Round Dance – Signals food source close to the hive (within 50-100 m); gives no direction.				
Waggle Dance – Signals distant food source (>100 m); conveys both distance (by waggle duration) and direction (by angle to the sun).				

