Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0811 08 AT 1201: Weed Management
Full Marks: 60 **Time:** 03 Hours **Credit:** 03

- There are four questions in each section, answer any three from each.
- Use separate sheet for each section. Sketch and label wherever necessary.

Section A

1.	(a)	Define satellite weed and alien weed. [L1; CLO1]	2.0
	(b)	Classify weeds based on life cycle with two examples in each case. [L2; CLO1]	3.0
	(c)	Explain why weeds are called 'plants out of place.'[L2; CLO1]	2.0
	(d)	Explain how weeds cause harm to the crops. Give examples. [L2; CLO1]	3.0
2.	(a)	Evaluate the role of seed bank on weed diversity in agricultural ecosystems. [L5; CLO1]	3.0
	(b)	Explain the following terms: i) Censer mechanism ii) Multiseasonal annuals [L2; CLO1]	2.0
	(c)	Describe how animals contribute to weed seed dispersal. [L2; CLO1]	2.0
	(d)	Discuss the causes of weed seed dormancy and how do they overcome in nature? [L2; CLO1]	3.0
3.	(a)	'Inherent hardiness and selective invasion make weed persistence'- explain. [L2; CLO1]	3.0
	(b)	'Distribution of weeds in relation to agronomic practices depends largely on how crops are managed'- justify. [L5; CLO1]	4.0
	(c)	Explain how soil type influences weed distribution. [L2; CLO1]	3.0
4.	(a)	Compare and contrast between crop bound and crop associated weeds. [L2; CLO2]	3.0
	(b)	Critically analyze the factors affecting crop-weed competition. [L2; CLO2]	3.0
	(c)	Define allelopathy. Describe the possible pathways of release of allelochemicals into the environment. [L1, 2; CLO2]	4.0

Section B

5.	(a)	Differentiate weed prevention from weed eradication. [L2; CLO2]	2.0
	(b)	Narrate the general considerations in weed management. [L1; CLO3]	2.0
	(c)	State the advantages and limitations of physical method of weed control. [L1; CLO3]	4.0
	(d)	'Shifting cultivation may be effectively utilized to manage weeds in some cases'- explain. [L2; CLO3]	2.0
6.	(a)	'Cultural methods of weed control are ecologically sound'- analyze. [L4; CLO3]	4.0
	(b)	Evaluate the role of smoother crops in weeds density suppression. [L5; CLO3]	4.0
	(c)	State the factors influencing the efficacy of foliage applied herbicides. [L1; CLO4]	2.0
7.	(a)	Discourse the application methods of soil applied herbicides. [L2; CLO3, 4]	4.0
	(b)	Pinpoint the major modes of action of herbicides. [L1; CLO4]	1.0
	(c)	'Granular herbicides have a number of benefits over water soluble concentrate'- evaluate. [L5; CLO4]	3.0
	(d)	Distinguish between a.i. and a.e. [L2; CLO4]	2.0
8.	(a)	Explain selectivity of herbicides? [L2; CLO4]	2.0
	(b)	Assess how do plant morphological features fix selectivity of herbicides. [L2; CLO4]	3.0
	(c)	Suggest some guidelines for herbicidal weed control in aus rice crop. [L6; CLO5]	3.0
	(d)	Prescribe important measures to control weeds in a wheat field. [L6; CLO5]	2.0

[L1-Remember, L2-Understand, L3-Apply, L4-Analyze, L5-Evaluate, L6-Create]

Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0811 08 AT 1203: Fundamentals of Horticulture
Full Marks: 60 **Time:** 03 Hours **Credit:** 02

- There are four questions in each section, answer any three from each.
- Use separate sheet for each section. Sketch and label wherever necessary.

Section A

1.	(a)	Define horticulture. State its major objectives. [L1 & L2; CLO1]	2.0
	(b)	How is horticulture linked to agriculture and other branches of science? Explain. [L1 & L2; CLO1]	3.0
	(c)	Assess the importance of horticulture in the agricultural economy and nutritional security of Bangladesh. [L6; CLO1]	5.0
2.	(a)	Define and classify propagation. Write the advantages and disadvantages of vegetative propagation. [L1, 4; CLO2]	3.0
	(b)	Describe the environmental factors that affect rooting of cuttings. [L2; CLO2]	4.0
	(c)	Analyze the causes of incompatibility of a graft union. [L4; CLO2]	3.0
3.	(a)	Suppose you are advised to mass-scale propagation of guava. Which method will you follow? Describe the method. [L6; CLO2]	4.0
	(b)	What are growth regulators? Analyze the impact of growth regulators in propagation. [L1, 4; CLO2]	4.0
	(c)	Which type of budding do you suggest for jujube and why? [L2; CLO2]	2.0
4.	(a)	What are the different types of apomixis? Describe them. [L2; CLO2]	3.0
	(b)	Propose some protection measures required for the propagation of horticulture crops. [L6; CLO4]	3.0
	(c)	Suppose you are advised to evaluate the suitability of a place for orchard establishment. How will you proceed? Illustrate. [L6; CLO2]	4.0

Section B

5.	(a)	Why should you follow a planting system for establishing a commercial orchard? [L5; CLO3]	4.0
	(b)	Suggest a suitable planting system for a mango orchard. Describe its salient features. [L3; CLO3]	3.0
	(c)	Compare and contrast the square and quincunx planting systems. [L6; CLO3]	3.0
6.	(a)	Briefly discuss the methods of seed treatment for better and faster germination. [L6; CLO4]	3.0
	(b)	Illustrate the methods of fertilizer application in a nursery. [L2; CLO4]	4.0
	(c)	Describe the essentiality of irrigation and drainage for horticultural crops. [L4; CLO4]	3.0
7.	(a)	Define pruning. Enlist the objectives and principles of pruning. [L4; CLO1]	4.0
	(b)	'Pruning has significant effect on fruit production and quality'– justify. [L3; CLO5]	3.0
	(c)	Define and classify training. Distinguish between pruning and training. [L1, 4; CLO5]	3.0
8.	(a)	What is bearing habit and enlist its types with examples. [L1; CLO5]	4.0
	(b)	Enlist the harvesting maturity indices of fruits and vegetables. [L1; CLO6]	3.0
	(c)	Enlist the steps in post-harvest handling of fruits and vegetables from harvest to consumer. [L1; CLO6]	3.0

[L1-Remember, L2-Understand, L3-Apply, L4-Analyze, L5-Evaluate, L6-Create]

Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0811 08 AT 1205: Introductory Animal and Poultry Science
Full Marks: 60 **Time:** 03 Hours **Credit:** 02

- There are four questions in each section, answer any three from each.
- Use separate sheet for each section. Sketch and label wherever necessary.

Section A

1.	(a)	Define livestock and poultry. Discuss their roles in supporting livelihoods, particularly in rural areas. [L2; CLO1]	3.0
	(b)	"Livestock is an integral component of traditional agriculture." Explain and justify this statement with relevant examples. [L5; CLO2]	3.0
	(c)	Identify and explain the major constraints affecting livestock production in Bangladesh. [L3; CLO2]	4.0
2.	(a)	Define the following terms: breed, lactation, heifer, parturition, doe, and kid. [L1; CLO1]	3.0
	(b)	Explain the importance of zoological classification in animal science. Also, outline the zoological classification of buffalo. [L2, 3; CLO3]	3.0
	(c)	Define castration. Describe the different methods of castration used in goats, highlighting their advantages and disadvantages. [L2; CLO2]	4.0
3.	(a)	Explain the importance of animal identification in a commercial farm. Compare and contrast two identification methods, listing one advantage and one disadvantage of each. [L4; CLO1]	3.0
	(b)	Classify goat breeds according to their primary use. Write the origin and characteristics of one prominent meat-type goat breed available in Bangladesh. [L2; CLO1]	3.0
	(c)	Compare and contrast the Murrah and Nili-Ravi buffalo breeds based on their origin, key morphological characteristics, and average milk production. [L4; CLO1]	4.0
4.	(a)	Differentiate between sheep and goat. [L4; CLO1]	3.0
	(b)	According to the Purebred Dairy Cattle Association (PDCA) scorecard, what are the five major categories for judging a dairy cow and their respective weightings? Why does the "Udder" category receive the highest score? [L2; CLO3]	3.0
	(c)	What are the four key factors to consider when judging or selecting a draught animal? Explain why a crossbred animal might be preferred over a purebred exotic breed for draught purposes in rural Bangladesh. [L1&4; CLO3]	4.0

Section B

5.	(a)	What is meant by an animal's environment? Briefly describe the components that make up an animal's environment. [L2; CLO4]	3.0
	(b)	How would you depict the ideas of habitat and niche using diagrams? [L2; CLO5]	3.0
	(c)	How would you categorize the different branches of ecology? Explain. [L1; CLO4]	4.0
6.	(a)	Define THI (Temperature-Humidity Index) and state its numerical threshold for: (i) onset of discomfort (ii) severe stress, and (iii) significant milk yield reduction in	3.0

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Full Marks: 60 **Time:** 03 Hours **Credit:** 02

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dairy cattle. [L3; CLO5]

(b) A heat-stressed lactating cow shows poor estrus, high somatic cell count, and reduced feed intake. Identify specific endocrine changes responsible for these signs and recommend cooling and nutritional intervention. [L3; CLO4] 3.0

(c) Explain how heat stress alters the glucose-insulin axis and lipid metabolism, and analyze how these changes together worsen NEBAL (Negative Energy Balance) and protein metabolism in dairy cows. [L4; CLO5] 4.0

7. (a) Define poultry and list the common types of birds classified under poultry. [L1; CLO1] 3.0

(b) A farmer plans to start a small-scale poultry farm. Using your knowledge of economic considerations in poultry production, suggest three key factors the farmer should evaluate before investing, and explain how each factor affects profitability. [L3; CLO2] 3.0

(c) What are the significant problems and challenges faced by the poultry industry in Bangladesh? [L2; CLO2] 4.0

8. (a) Define the following terms: broody, cannibalism, capon, flock, pullet, and hen. [L1; CLO7] 3.0

(b) Differentiate between intensive and extensive poultry production systems. [L4; CLO7] 4.0

(c) Justify the importance of proper poultry housing in commercial farming. [L5; CLO7] 3.0

Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0811 08 AT 1207: Introductory Entomology
Full Marks: 60 **Time:** 03 Hours **Credit:** 03

- There are four questions in each section, answer any three from each.
- Use separate sheet for each section. Sketch and label wherever necessary.

Section A

1.	(a)	Compare between chewing and siphoning mouthparts in respect to feeding strategies. [L5; CLO3]	4.0
	(b)	Analyze the hormonal regulation of molting by ecdysone. [L4; CLO3]	3.0
	(c)	Discuss the structural adaptations that have made Arthropoda the most successful animal phylum. [L4; CLO2]	3.0
2.	(a)	Compare the functional advantages of elytra in beetles versus halteres in flies in terms of flight efficiency and protection. [L2; CLO1]	3.0
	(b)	Compare the diagnostic features of insects, arachnids, crustaceans, and myriapods under Arthropoda. [L3; CLO2]	4.0
	(c)	Sequentially demonstrate the layers of the insect integument from outermost to innermost with their key ingredients. [L4; CLO3]	3.0
3.	(a)	Illustrate the structure and mechanism of chewing lapping type mouthparts with clear diagram. [L3; CLO3]	3.0
	(b)	Critique the statement: "Without the enzyme chitinase, apolysis can still complete ecdysis successfully." [L5; CLO3]	4.0
	(c)	Outline the major modifications of insect wings and mention their biological significance. [L4; CLO3]	3.0
4.	(a)	Identify the antennal types in which the terminal segments form a club and a bristle with insect names. [L3; CLO3]	4.0
	(b)	Contrast the femoral and tibial modifications in a raptorial mantis leg versus a scansorial fly leg. [L4; CLO2]	3.0
	(c)	Describe the major types of insect pupae and mention their characteristic features. [L3; CLO3]	3.0

Section B

5.	(a)	Classify Exopterygotan insect upto order with examples. [L3; CLO5]	4.0
	(b)	Differentiate the ecological roles of Orthoptera versus Hemiptera in terms of direct vs. indirect damage to cereal crops. [L4; CLO4]	3.0
	(c)	Describe the distinguishing characteristics, habitat preferences, and economic significance of the following insect orders: i) Lepidoptera ii) Coleoptera, and iii) Hymenoptera [L3; CLO5]	3.0
6.	(a)	Define insect systematics and phylogenetics. Evaluate their importance in understanding insect diversity and evolution. [L1, 4; CLO4]	5.0
	(b)	Write the name of larval stage of the following insect orders- i) Lepidoptera ii) Coleoptera iii) Diptera iv) Odonata. [L1; CLO5]	2.0

[L1-Remember, L2-Understand, L3-Apply, L4-Analyze, L5-Evaluate, L6-Create]

Khulna University

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Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0811 08 AT 1207: Introductory Entomology
Full Marks: 60 **Time:** 03 Hours **Credit:** 03

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	(c)	'Both dragonfly and damselfly belong to the same order, Odonata but vary from one another'-explain with clear diagram. [L3; CLO5]	3.0
7.	(a)	State the diagnostic characteristic of Thysanoptera and name one pest family within this order. [L2; CLO4]	3.0
	(b)	'Although pyralidae and noctuidae belongs to same order, they vary significantly each other'- judge logically. [L4; CLO5]	4.0
	(c)	Justify why insect systematics is more critical for biological control programs than for biodiversity inventories alone. [L5; CLO4]	3.0
8.	(a)	Enlist the scientific name, family name and order name of Brown planthopper, Silk worm moth, Honey bee, and Bean aphid with their economic importance in crop production. [L2; CLO5]	4.0
	(b)	Examine the structural differences between Short Horned Grasshopper and Long Horned Grasshopper. [L4; CLO5]	3.0
	(c)	Characterize the family of Bomycidae, Pyralidae and Tepritidae with one example in each. [L3; CLO5]	3.0

Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0512 08 AT 1209: Biochemistry
Full Marks: 60 **Time:** 03 Hours **Credit:** 03

- There are four questions in each section, answer any three from each.
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Section A

1.	(a)	Relate the importance of biochemistry to agriculture. [L2; CLO1]	3.0
	(b)	What are epimers? Explain. [L2; CLO2]	1.5
	(c)	Describe oligosaccharides with examples. [L2; CLO2]	1.5
	(d)	Differentiate between storage polysaccharides and structural polysaccharides. How do storage polysaccharides meet the demand of carbohydrates in the world? Explain. [L2 & L4; CLO2]	4.0
2.	(a)	What are epimers? Explain it with examples.	3.0
	(b)	What is reducing sugar? How can you detect the presence of reducing sugar in carbohydrate?	3.0
	(c)	What is denaturation of protein? What are the causes of denaturation? Write the effect of protein denaturation.	4.0
3.	(a)	Classify seed proteins along with their characteristics and examples. [L2; CLO2]	3.0
	(b)	Explain the significance of free amino acids in agriculture. [L2; CLO2]	3.0
	(c)	What are essential fatty acids? Explain their importance along with sources. [L2; CLO3]	4.0
4.	(a)	Describe the functions of lipids. [L2; CLO3]	3.0
	(b)	What is cholesterol? Describe its function.	3.0
	(c)	Mention the salient features of the Watson-Crick model of DNA structure. [L2; CLO3]	2.0
	(d)	List the features of the genetic code. [L2; CLO3]	2.0

Section B

5.	(a)	Define enzyme specificity and classify the different types of enzyme specificity with appropriate examples. [L1; CLO4]	3.0
	(b)	Explain how various factors influence enzyme activity and demonstrate their effects using practical or experimental examples. [L3; CLO4]	3.0
	(c)	Critically explain the applications of enzymes in different sectors by comparing their impacts in a tabular format. [L5; CLO4]	4.0
6.	(a)	Evaluate the role of vitamin A status in infection susceptibility along with the mechanisms behind it. [L4; CLO4]	4.0
	(b)	Illustrate the absorption process of vitamin D in the human body. [L2; CLO4]	4.0
	(c)	What are the signs and manifestations of thiamine (B1) deficiency that may occur in the human body? [L2; CLO4]	2.0
7.	(a)	Mention the reactions that occur in TCA cycle and state the total number of ATP molecules produced. [L1; CLO5]	4.0

[L1-Remember, L2-Understand, L3-Apply, L4-Analyze, L5-Evaluate, L6-Create]

Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0512 08 AT 1209: Biochemistry
Full Marks: 60 **Time:** 03 Hours **Credit:** 03

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	(b)	List the name of central metabolic pathways. Can you list the reactions in glycolysis that proceed only in one direction? [L2; CLO5]	3.0
	(c)	Diagrammatically show the entry points of different amino acids into the TCA cycle. [L3; CLO5]	3.0
8.	(a)	Draw a labeled diagram showing the biosynthetic pathway through which plants produce secondary metabolites. [L1; CLO4]	2.0
	(b)	Categorize the major classes of phenolics in plants and describe the structural feature that defines each class. Summarize the key ecological and physiological functions of phenolics in plants. [L3; CLO4]	5.0
	(c)	List four major classes of alkaloids and state pharmaceutical use of alkaloids for each. [L2; CLO4]	3.0

Khulna University

School: Life Science **Discipline:** Agrotechnology **Program:** Bachelor (Hons.)
Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0231 08 Eng 1251: Comprehensive and Communication Skill in English
Full Marks: 60 **Time:** 03 Hours **Credit:** 02

- There are four questions in each section, answer any three from each.
- Use separate sheet for each section. Sketch and label wherever necessary.

Section A

1. Read the provided text segments and answer the question given-

After some terrible tragedy or heart-breaking incident, most people lose hope, but some people never give up and become a role model for millions of others. Muniba Mazari is such a woman who lives her life bound by a wheel chair but who still inspires others and creates positive change in society. Muniba was born in 1987, but her life changed in 2007 when she experienced a horrible car accident. Her whole body was badly injured and her legs were completely paralyzed for the rest of her life. In these hard times, her husband divorced her, seeing her as a disable person. Even Muniba's father left the family. It was then that Muniba decided to fight back and decided to turn her weaknesses into strengths. According to Muniba, the years spent in hospital were the worst years of her life, as she had to depend on others for even a glass of water. After being in bed for two years, she was allowed to use a wheel chair. "I was so happy when I sat in a wheelchair for the first time," said Muniba. "So what if I lost my legs? I have two wheels now," she said. That is when her life took a U-turn. Doctors encouraged her to continue working toward her dreams and passion, i.e., painting. Soon Muniba earned herself a name in the field of art and proved that a wheelchair cannot stop you from achieving your goals. Today, she is known as one of the best painters and artists in Pakistan. Her brand name is Muniba's Canvas, with the slogan of "Let your walls wear colors." [L4; CLO3]

(a) Give a suitable title to the text given. 2.0
(b) How did the accident emotionally affect Muniba? 2.0
(c) How did Muniba turn her weakness into her strength? 2.0
(d) Why is Muniba a role model to many? 2.0
(e) Summarize the text in four sentences. 2.0

2. (a) Change the following words as directed and make one sentence with each: 5.0
Education (into verb), Active (into verb), Silently (into noun), Care (into adjective), Difference (into adverb) [L3; CLO2]

(b) Change the following sentences as directed in brackets: 5.0

i) He does whatever he likes. (Passive)
ii) When the teacher entered into the room, the students stood up. (Simple)
iii) Everybody likes rose. (WH question)
iv) It is a great tragic accident. (Exclamatory)
v) She is working hard to get a brilliant result. (Complex) [L6; CLO2]

3. (a) Join the following parts of sentences using appropriate conjunctions or transitional words. Repetition of the same connector is not permitted. 5.0

i) The worker felt exhausted. He kept working.
ii) Mina prepared seriously. She failed the exam.
iii) Rina visited the market. She purchased some vegetables.
iv) The sky looked gloomy. We remained at home.

[L1-Remember, L2-Understand, L3-Apply, L4-Analyze, L5-Evaluate, L6-Create]

Khulna University

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Year: 1st **Term:** 2nd **Examination Year:** 2026 **Session:** 2025-2026
0231 08 Eng 1251: Comprehensive and Communication Skill in English
Full Marks: 60 **Time:** 03 Hours **Credit:** 02

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v) Move quickly. You may miss the train.
vi) The weather was foggy. The driver drove carelessly.
vii) I waited for him. He failed to arrive.
viii) The boy admitted his mistake. The teacher pardoned him.
ix) Nadia finished the assignment. She submitted it punctually.
x) The restaurant remained closed. They went back home. [L4; CLO1]

(b) Form WH-questions based on the underlined parts of the following statements: 5.0
i) Shams goes to university <u>by bus</u>.
ii) She bought <u>a new mobile phone</u> yesterday.
iii) They are waiting <u>in the office</u>.
iv) Tara met <u>Yana</u> after class.
v) The program ends at <u>12 am</u>. [L6; CLO2]

4. Write short notes on the following topics: 10
a) Difference between intensive and extensive reading
b) Techniques of using vocabulary efficiently [L2; CLO3]

Section B

5. (a) Discuss the role of listening in developing speaking skills. [L4; CLO2] 5.0
(b) Discuss the importance of listener-speaker rapport for congenial communication. [L4; CLO2] 5.0

6. (a) With the rapid advancement of artificial intelligence, a growing amount of AI-generated content is now circulating across online platforms. Write a well-organized essay on this phenomenon, providing a suitable title. [L3; CLO3] 10.0

7. (a) Identify the errors in capitalization and punctuation in the following passage: 5.0
education is very important for human life it helps people gain knowledge skills and values without education life becomes difficult many countries invest in education systems however quality education is still a problem for many students it is not available equally everywhere [L4, 6; CLO3]
(b) 'Online classes are less effective than classroom learning'. Write an essay supporting or arguing against the statement. [L4, 6; CLO3] 5.0

8. (a) Write a note on the key features and elements of academic writing. [L4; CLO2] 10.0

[L1-Remember, L2-Understand, L3-Apply, L4-Analyze, L5-Evaluate, L6-Create]