PROFESSIONAL REGULATORY BOARD OF AGRICULTURE
Resolution No. 04
Series of 2024

ADOPTION AND ISSUANCE OF THE ENHANCED TABLES OF SPECIFICATION FOR THE SUBJECTS IN THE LICENSURE EXAMINATION FOR AGRICULTURISTS

WHEREAS, the Vision Statement of the Professional Regulation Commission (Commission) is to serve as an instrument for the Filipino people in securing for the nation a reliable, trustworthy, and progressive system of determining the competence of professionals through credible and valid Licensure Examinations (LEs);

WHEREAS, Section 9 (h) of Republic Act (R.A.) No. 8981, known as the *"PRC Modernization Act of 2000,"* empowers the Professional Regulatory Boards (PRBs) to prepare, adopt, and issue the syllabi or Tables of Specifications (TOS) of the subjects for examination in consultation with the academe; determine and prepare the questions for the LEs which shall be strictly within the scope of the syllabus or TOS of the subjects for examination;

WHEREAS, Section 9 of Commission Resolution No. 663 (s. 2000), entitled *"Creation of the Board of Agriculture under the Professional Regulation Commission and for Other Purposes,"* states that the PRB of Agriculture (Board) has the function to prepare, adopt, and issue, in consultation with the academe, the syllabi or TOS of the subjects for the LE, and to amend the same;

WHEREAS, the Commission on Higher Education issued Memorandum Order No. 26 (s. 2012), widely known as *"Policy-Standard to Enhance Quality Assurance (QA) in Philippine Higher Education Through Outcomes-Based and Typology-Based QA,"* which states their "commitment to developing competency-based learning standards that comply with international standards to achieve quality and enable an effective integration of the intellectual discipline, ethics, and values associated with liberal education";

WHEREAS, Commission Resolution No. 1674 (s. 2023), provides PRBs with the prescribed template as a guide in revising/enhancing their respective TOS, which shall articulate the item distribution and weight of each topic, competency, and cognitive process of the Revised *Bloom's Taxonomy* as the basis for the LEs;

WHEREAS, with the recent developments, and to ensure that the Agriculturists LE serves its purpose in accurately assessing the competence and skill of their future professionals, the Board deems it necessary to issue a comprehensive and clear TOS for the said LE.

NOW THEREFORE, the Board **RESOLVES**, as it is hereby **RESOLVED**, to adopt and issue the Enhanced Tables of Specifications for the Subjects in the Agriculturists Licensure Examination, herein referred to as **"Annex A"** of this Resolution.

RESOLVED FURTHER, that this Resolution shall be implemented in the November Agriculturists Licensure Examination and onwards.

This Resolution shall take effect immediately following its publication in the Official Gazette or in any newspaper of general circulation in the Philippines.

Let a copy of this Resolution be furnished the University of the Philippines Law Center, for information.

Done in the City of Manila, this 17th day of October, 2024.

EMMA K. SALES
Chairperson

ANASTACIA G. NOTARTE
Member

MARIA EDEN S. PIADOZO
Member

LILIA A. PORTALES
Member

ERIC P. PALACPAC
Member

ANNABELLE S. SARABIA
Member

ATTESTED BY:

ATTY. LOVELIKA T. BAUTISTA
Chief, PRB Secretariat Division

DATE OF PUBLICATION IN THE BUSINESS MIRROR: 29 OCTOBER 2024
EFFECTIVE DATE: IMMEDIATELY

APPROVED:

CHARITO A. ZAMORA
Chairperson

JOSE Y. CUETO, JR.
Commissioner

ERWIN M. ENAD
Commissioner

"ANNEX A"

TABLE OF SPECIFICATIONS

Board of AGRICULTURE
Subject: CROP SCIENCE
Weight: 16.7 %

PQF Level: 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt (%)	No. of Item						
The examinees can perform the following competencies under each topic:								
A. Nature and Importance of Agriculture	**1.50**	**9**	**1**	**2**	**4**	**1**	**1**	
1. Overview and Development of Agriculture	0.85	5	1		4			
1.1 Define Agriculture on various context		1	1					
1.2 Examine the current Philippine agriculture in relation to sustainable production		1			1			
1.3 Illustrate the development of Agriculture, the scope, history and present situation of Philippine Agriculture		1			1			
1.4 Apply the present innovations of Agriculture to the challenges in food production		2			2			
2. Importance of Agriculture	0.64	4		2		1	1	
2.1 Compare the current government programs with that of the traditional practices to address food security and sustainability		1				1		
2.2 Appraise present Agriculture innovations to improve food production		1					1	
2.3 Explain the principles and applications of Biotechnology, Patents and other directions in Agriculture		2		2				
B. Classification of Crops. Botanical and Agricultural system of classification	**1.50**	**9**	**1**	**1**	**4**	**1**	**2**	
1. Classification of Crops and their Geographical Distribution	1.50	9	1	1	4	1	2	
1.1 Identify major and minor agricultural crops grown in the Philippines		1	1					

1.2 Compare the origin and geographic distribution of different high value crops		1				1		
1.3 Discriminate crops based on their agricultural classification		1					1	
1.4 Determine the different methods used in classifying crops		2			2			
1.5 Differentiate crops based on their binomial nomenclature and taxonomy		2		1	1			
1.6 Illustrate the importance of classifying crops		1			1			
1.7 Apply the different systems of plant classification based on use and functionality		1					1	
C. Nature and Composition of Crop Plants	**1.50**	**9**	**1**	**2**	**4**	**1**	**1**	
1. Plant Cells, Tissues Organs and Systems	1.50	9	1	2	4	1	1	
1.1 Identify the different plant parts		1	1					
1.2 Relate the major parts of the plants (leaf, stem, shoot flower and fruit) to their functions		2		2				
1.3. Classify major plant parts and their importance in agriculture		3			3			
1.4 Establish the role of plant parts in growth and development		1			1			
1.5 Compare the role of s each plant part according to their functions		1				1		
1.6 Asses the importance of classifying crops by economic purpose		1					1	
D. Plant Growth and Development	**1.50**	**9**	**1**	**1**	**4**	**1**	**2**	
1. Plant Growth	1.50	9	1	1	4	1	2	
1.1 Evaluate the concept and phases of plant growth and development as it affects crop production		2					2	
1.2 Relate the physiological phases of plant growth and development to optimum crop yield		1				1		
1.3 Identify the major processes involved in plant development		1	1					
1.4 Relate the physiological processes with various factors affecting crop production		3			3			
1.5 Indicate the different factors affecting each physiological process in plants		1		1				
1.6 Demonstrate the relationship of each physiological process with various factors affecting each process		1			1			
E. Factors affecting crop production	**2.50**	**15**	**2**	**2**	**5**	**3**	**3**	
1. Abiotic factors	1.35	8	1	2		3	2	
1.1 Identify the different abiotic factors affecting crop production		1	1					

1.2 Evaluate the effect of abiotic factors in crop yield and production		2					2	
1.3 Explain the importance of the various environmental factors affecting growth, development and yield of crops		1		1				
1.4 Analyze the influence of each climatic element on the production and yield of crops		1				1		
1.5 Determine critical growth stages of major crops		1				1		
1.6 Explain the interaction of biotic and abiotic factors in the overall performance of crops		1		1				
1.7 Analyze the importance of biotic and abiotic factors in crop production		1				1		
2. Biotic and Genetic Factors	1.17	7	1		5		1	
2.1 Enumerate the different biotic and genetic factors affecting crop yield and production		1	1					
2.2 Determine the relationship between and among the biotic and abiotic factors affecting crop production and yield		2			2			
2.3 Demonstrate the importance of varietal selection for crop production		3			3			
2.4 Evaluate the biotic and abiotic factors affecting crop yield		1					1	
F. Crop Improvement, Seed Selection and Biotechnology	**2.70**	**16**	**2**	**3**	**6**	**3**	**2**	
1. Crop Improvement	1.34	8	2	1	4	1		
1.1 Recall the basic concepts in genetics		2	2					
1.2 Apply the basic concepts of genetics in plant breeding		2			2			
1.3 Identify different breeding methods		1		1				
1.4 Differentiate conventional with non-conventional breeding techniques		1			1			
1.5 Demonstrate the different breeding methods used for crop improvement		1			1			
1.6 Compare the breeding techniques suitable for a particular purpose		1				1		
2. Biotechnology	0.68	4		1		1	2	
2.1 Identify biotechnology tools used in crop improvement		1		1				
2.2 Assess the importance and utility of the various biotechnology tools in crop improvement		1					1	
2.3 Integrate the various concepts of conventional breeding techniques with biotechnology tools		1				1		

2.4 Evaluate the various advances and trends in crop improvement		1					1	
3. Seed Selection	0.68	4		1	2	1		
3.1 Illustrate the importance of evaluating seed quality		2			2			
3.2 Identify the different practices in seed production and handling		1		1				
3.3 Compare the basic steps in in the production, certification and distribution of certified seeds		1				1		
G. Sustainable Crop Production	**1.50**	**9**	**1**	**2**	**4**	**1**	**1**	
1. Concepts of Sustainable Agriculture	0.51	3	1			1	1	
1.1 Define sustainable crop production		1	1					
1.2 Determine the fundamental concepts of sustainable agriculture		1				1		
1.3 Assess the adequacy of sustainable crop production for food security and climate change mitigation		1					1	
2. Approaches and Techniques in sustainable crop production system	0.99	6		2	4			
2.1 Employ the various techniques applied in sustainable crop production		2			2			
2.2 Describe the importance of sustainable crop production to the environment and biodiversity		2		2				
2.3 Employ the concepts and approaches of sustainable crop production to crop productivity		2			2			
H. Crop Production Practices	**2.50**	**15**	**3**	**3**	**6**	**2**	**1**	
1. Concepts of Crop Production	1.14	7	2	2	3			
1.1 Identify the concepts and value of crop production to food security		1	1					
1.2 Distinguish basic production practices suitable for specific crops		2		2				
1.3 Differentiate various crop production practices in a crop production system		1	1					
1.4 Relate each crop production technique to the environmental, socio cultural and political factors		3			3			
2. Planting Methods, Selection and Preparation	0.85	5			3	1	1	
2.1 Choose the various types of planting materials for a specific crop		1			1			
2.2 Classify methods and preparation of planting materials		1				1		
2.3 Recommend appropriate methods and practices of plant propagation suitable to a crop		1					1	

2.4 Examine the principles and practices in growing and handling agronomic and horticultural crops		1			1			
2.5. Calculate the seeding rate for specific crops for optimum crop yield and crop production		1			1			
3. Harvesting and postharvest technology	0.51	3	1	1		1		
3.1 Analyze the concept on pre and postharvest factors as they affect postharvest quality of crops		1				1		
3.2 Enumerate the harvesting and post production practices in different crops		1	1					
3.3. Distinguish types of maturity and maturity indices		1		1				
I. Site Selection and Characterization	**1.50**	**9**	**2**	**1**	**3**	**2**	**1**	
1. Site Identification and Evaluation		9	2	1	3	2	1	
1.1 Identify desirable characteristics of site for a crop production enterprise		2	2					
1.2 Associate crop vis a vis environment for optimum yield in a particular site		1		1				
1.3 Analyze the relationship of important terminologies in understanding the significance of site selection for a crop production enterprise		1				1		
1.4 Choose appropriate sites for a successful crop production enterprise for specific crops		1					1	
1.5 Establish procedures in the selection of location, site and planting methods for various crops		1			1			
1.6. Compare the planting methods that can be used for a particular proposed site of a crop production enterprise		1				1		
1.7. Determine the appropriate steps in the selection of a site for a specific crop production enterprise		2			2			
Total (for 100 items)	**16.7**	**100**	**14**	**17**	**40**	**15**	**14**	

TABLE OF SPECIFICATIONS

Board of: AGRICULTURE
Subject: SOIL SCIENCE
Weight: 16.7%

PQF Level: 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt. (%)	No. of Items						
The examinees can perform the following competencies under each topic:								
A. Soil Development	**4.17**	**25**		**8**		**13**	**4**	
1. Soil genesis, composition, and development	2.00	12		8			4	
1.1 Discuss soil as a natural resource.		4		4				
1.2 Explain the concepts of the edaphologist versus concepts provided by the pedologist on the definition of soils.		4		4				
1.3 Evaluate the mineral soils and organic soils in the context of their properties, functions, and possible degradation of the environment.		4					4	
2. Soil Profile	2.17	13				13		
2.1 Characterize a typical soil profile demonstrating the significant layers when developed under tropical condition.		6				6		
2.2 Classify the various soil horizons of mineral soils versus that of organic soils.		7				7		
B. Physical Properties of Soils	**2.51**	**15**	**3**	**2**	**4**	**6**		
1. Soil texture and soil structure	1.00	6				6		
1.1 Compare soil texture from soil structure.		2				2		
1.2 Analyze how the soil texture highly recommended for upland crops like corn and leafy vegetables differ from those of soils recommended for irrigated rice.		2				2		
1.3 Analyze how the soil structure highly recommended for upland crops like corn and leafy vegetables differ from those of soils recommended for irrigated rice.		2				2		

2. Bulk density and particle density	0.67	4			4			
2.1 Determine the bulk density and particle density of soils.		4			4			
3. Properties of soils under different conditions	0.84	5	3	2				
3.1 Describe the main characteristics of soils near beaches.		3	3					
3.2. Explain why irrigated rice could not be planted in areas near the beaches.		2		2				
C. Chemical Properties of Soils	**4.51**	**27**			**14**		**13**	
1. Chemical composition of soils	0.83	5					5	
1.1 Assess the essentiality of fertilizers with macro elements for crop production in relation to the growth of an agricultural country.		3					3	
1.2 Assess the essentiality of fertilizers with micro elements for crop production.		2					2	
2. Essentiality of macro and micro elements	1.00	6			3		3	
2.1 Illustrate the general appearance of corn plants when deficient in nitrogen, phosphorous, and potassium.		3					3	
2.2. Demonstrate how each of the elements – nitrogen, phosphorous and potassium failed to enter the plant roots at sufficient levels.		3			3			
3. Soil pH	1.84	11			6		5	
3.1 Demonstrate how soil pH affects the availability of essential elements for plant growth and development.		6			6			
3.2 Evaluate the important factors to consider in the choice of liming materials to be applied.		5					5	
4. Soil Organisms	0.84	5			5			
4.1 Demonstrate how soil macro-organisms affect crop production and their role in the production of organic fertilizers.		2			2			
4.2 Demonstrate how soil micro-organisms affect crop production and their role in the production of organic fertilizers.		3			3			
D. Soil Fertility and Management	**3.34**	**20**	**4**	**2**	**9**		**5**	
1. Soil Fertility	2.50	15	4	2	4		5	

1.1 Explain how soil fertility differs from soil productivity.		2		2				
1.2 Demonstrate how soil nutrients reach the root surfaces of plants.		4			4			
1.3 Determine the impact of different slopes in loss of soil fertility in the presence of intense rainfall.		5					5	
1.4 Describe the different control measures in preventing loss of fertility under upland conditions.		2	2					
1.5 Describe the different control measures in preventing loss of fertility under lowland conditions.		2	2					
2. Soil Management	0.84	5			5			
2.1 Calculate how inorganic fertilizer requirements is done.		3			3			
2.2 Calculate how organic fertilizer requirements is done.		2			2			
E. Soil Survey and Soil Classification	**2.17**	**13**	**1**		**9**		**3**	
1. Soil Survey	0.67	4	1				3	
1.1 Identify the advantages of soil survey.		1	1					
1.2 Evaluate the major factors which control soil formation.		3					3	
2. Soil Classification	1.50	9			9			
2.1 Illustrate the significant features of soil taxonomy.		2			2			
2.2 Illustrate the basis of naming the six categories of soil classification.		3			3			
2.3 Demonstrate how the names of the ten soil orders were derived.		4			4			
Total (out of 100)	**16.7**	**100**	**8**	**12**	**36**	**19**	**25**	

TABLE OF SPECIFICATIONS

Board of AGRICULTURE
Subject: CROP PROTECTION
Weight: 16.7%

PQF Level: 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wt (%)	No. of Item						
The examinees can perform the following competencies under each topic:								
A. Nature and Importance of Crop Protection	**0.51**	**3**	**1**	**2**				
1. Overview of Crop Protection	0.51	3	1	2				
1.1 Explain the role of crop protection in increasing food supply				1				
1.2 Discuss the economic importance of pests				1				
1.3 Identify the various disciplines in crop protection			1					
B. Plant Pathogens	**3.01**	**18**	**9**	**1**	**3**	**3**	**2**	
1. Concepts and Economic Importance of Plant Diseases	0.67	4	3	1				
1.1 Define common terms used in plant pathology				1				
1.2 Identify the scientific name and common name of plant pests and diseases			1					
1.3 Identify the various agents of various plant diseases			1					
1.4 Recall the principle of plant disease control			1					
2. Disease Cycle and Causes of Plant Diseases	1.17	7	4			1	2	
2.1 Determine the parasitic or biotic agent of plant diseases							2	
2.2 Identify symptoms of different parasitic plant diseases			1					
2.3 Identify the common vector of plant diseases			1					
2.4 Identify the symptoms caused by fungi			1					
2.5 Identify the groups of plant parasitic nematodes			1					
2.6 Analyze the symptoms caused by bacteria						1		
3. Plant Disease Epidemiology and Variability in Plant Pathogens	1.17	7	2		3	2		
3.1 Identify crops with pesticidal use			1					
3.2 Use different ways to control fungi					1			
3.3 Recall the kind of fungicides								
3.4 Distinguish the expression/visible appearance			1					

of plants infected with pathogens or diseases						1		
3.5 Relate the interaction of different parasitic agents to crops					1			
3.6 Analyze microorganisms with positive effect on plants						1		
3.7 Determine the ways of assessing important/ common pests and diseases of agricultural crop					1			
C. Arthropods and Vertebrate Pests and Natural Enemies	**2.85**	**17**	**6**	**3**	**5**	**1**	**2**	
1. Arthropod Pests	1.83	11	5	2	3	1		
1.1 Determine the classification, nomenclature and identification of an insects					1			
1.2 Review the history of the introduction of pests in the Philippines			1					
1.3. Recall the trend of important pests in the country			1					
1.4 Identify the distinguishing characteristics of insect vs mite			1	1				
1.5 Describe the insect metamorphosis or life cycle			1					
1.6 Identify the scientific names and common names of plant pests and diseases								
1.7 Identify abundant order of insect-based on facts and figures			1					
1.8 Differentiate the insect pests and their importance to crop production					1			
1.9 Determine the process of assessing important/ common pests and diseases of agricultural crop					1			
1.10 Analyze the different strategies to control insect pests like chemical (pesticides) and biological control				1		1		
1.11 Identify pests as possible sources of protein for human								
2. Important Vertebrate Pests - Birds and Rodents	0.51	3		1	1		1	
2.1 Identify the different important vertebrate pests				1				
2.2 Determine the economic effects on crop production					1			
2.3 Assess the strategic program in its control and mitigation							1	
3. Common Natural Enemies of Insects and Vertebrate Pests	0.51	3	1		1		1	

3.1 Identify the common natural enemies of insects and vertebrate pests 3.2 Apply different methodologies using natural enemies to combat insects and vertebrate pests 3.3 Assess the effectivity of biological control on different pests			1		1		1	
D. Weeds	**1.49**	**9**	**1**	**2**	**3**	**1**	**2**	
1. Concept of Weed Science	0.17	1		1				
1.1 Describe the characteristics of weeds, crops and pests				1				
2. Classification of Weeds	0.33	2	1				1	
2.1 Distinguish the ways of classifying weeds based on morphological characteristics or outward appearance 2.2 Identify the scientific names and common names of weeds			1				1	
3. Effects of Weeds on Human Affairs	0.33	2		1		1		
3.1 Describe the effects of weeds on crop production 3.2. Analyze the effects of reproduction and establishment of weeds				1		1		
4. Change in Weed Population	0.33	2			1		1	
4.1 Determine factors affecting weed population and dispersal 4.2 Evaluate the factors that affect crop-weed competition					1		1	
5. Weed Management	0.33	2			2			
5.1 Determine the methods and techniques in weed management 5.2 Apply appropriate weed mitigation and control using both/either chemical and biological methods					1 1			
E. Invasive Species	**0.51**	**3**	**0**	**1**	**1**	**0**	**1**	
1. Mollusks and Scale Insects	0.51	3		1	1		1	
1.1 Describe the characteristics of the invasive species 1.2 Determine the process of development of the invasive species 1.3. Establish the best control measure in eradicating invasive species				1	1		1	
F. Pest Management	**8.34**	**50**	**1**	**3**	**28**	**8**	**10**	
1. Concept of Pest Management (PM)	1.00	6		1	3	2		
1.1 Describe the concept of pest management 1.2 Determine the component factors causing pest problem in the field 1.3 Analyze the general considerations in planning pest management programs				1	3	2		

2. The Integrated Pest Management (IPM)	2.67	16		1	8	4	3	
2.1 Analyze the current and emerging (use of biorationals and GMO) trends in IPM/PM 2.2 Recall the historical trends in IPM/PM 2.3 Compare the methodologies of the ETL (economic threshold level) and AESA (agro-ecosystem analysis) based IPM 2.4 Assess the economic and ecological factors affecting IPM in the management of pest situations 2.5 Apply IPM in selected crops and pest systems (rice, vegetables, corn, selected fruits, mixed cropping in urban gardens) under the Philippine situation				1	2 6	4	3	
3. Various Strategies in the Control of Pests	3.50	21		1	11	2	7	
3.1 Identify the different strategies in the control of pests 3.2 Assess the specific application and consequences of the different strategies in the control of pests 3.3 Apply each control strategy (regulatory, genetic manipulation of crops and pests, cultural control and habitat manipulation, behavioral control, mechanical and physical control, biological control, chemical control and bio-pesticides) 3.4 Compute the required pesticide in controlling plant pest 3.5 Determine the dynamics of economic injury level (EIL) in relation to ETL in pest or disease control 3.6 Calculate EIL or "break-even" point as the basis of farmers to decide the need for pest or disease control 3.7 Recommend the best strategy in the control and mitigation of pests and diseases				1	6 2 3	2	6 1	
4. Current and Future Trends in Crop Protection	1.17	7	1		6			
4.1 Determine advances in biotechnology in crop protection (GM crops, BT technology, management of resistance) 4.2 Apply SMART agriculture in pest management					3 2			

4.3 Determine the application of artificial intelligence (AI) in crop protection					1			
4.4 Identify applicable pest management option for urban farming			1					
Total (for 100 items)	**16.7**	**100**	**18**	**12**	**40**	**13**	**17**	

TABLE OF SPECIFICATIONS

Board of AGRICULTURE
Subject: ANIMAL SCIENCE
Weight: 16.67%

PQF Level: 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt (%)	No. of Item						
The examinees can perform the following competencies under each topic:								
A. Introduction	**1.33**	**8**	**4**	**4**				
1. The Animal and Its Environment	0.33	2						
1.1 Describe animals in its ecological system and historical origins as a significant field in agriculture			1	1				
2. The Animal and Its Economic Utility	0.33	2						
2.1 Discuss the economic importance and utility of the farm animals			1	1				
3. Animal Agriculture, Issues and Concerns	0.33	2						
3.1 Relate local to international farm animal population 3.2 Explain supply and demand of animal products and the issues on local and world animal production			1	1				
4. Animal population and Stakeholders	0.33	2						
4.1 Identify animal population by species, stakeholders and others 4.2 Explain the different animal population species and its relationship to the respective stakeholders and others			1	1				
B. Anatomy and Physiology of Farm Animals	**2.0**	**12**		**4**	**5**	**2**	**1**	

1. Terminologies on Anatomy and Physiology	0.17	1						
1.1 Distinguish the technical terminologies and the importance of coordination of animal functions				1				
2. External Anatomy and Physiology	0.17	1						
2.1 Illustrate the external anatomy and the respective physiological functions of the different body parts of farm animals					1			
3. Internal Anatomy and Physiology	1.66	10						
3.1 Discuss internal anatomy in relation to the concepts and principles of the body systems 3.2 Demonstrate the morphological relationship of the different internal parts of the body systems (i.e. nervous, endocrine, cardiovascular, respiratory, excretory, reproductive, body temperature regulation) to its physiological functions 3.3 Analyze the physiological processes involved in the various internal body parts 3.4 Assess the importance of the different body parts and its function to the responses to various environmental challenges (external and internal)				3	4	2	1	
C. Genetics and Animal Breeding	**1.67**	**10**		**3**	**4**	**1**	**2**	
1. Genetics	0.50	3						
1.1 Describe the concepts, principles, methodologies and updates in animal genetics 1.2 Apply the concepts, principles and				1				

methodologies of genetics in animal improvement 1.3 Analyze the concepts, principles and methodologies in genetics (genes, mechanics of inheritance and their role in animal productivity) and its impact in animal improvement					1	1		
2. Animal Breeding	0.50	3						
2.1 Explain animal breeding objectives, selection methods and systems of breeding 2.2 Apply the use of animal breeding objectives, selection methods and systems of breeding in animal genetic improvement 2.3 Assess the role of animal breeding objectives, selection methods and systems of breeding in animal productivity				1	1		1	
3. Animal Reproduction	0.67	4						
3.1 Describe the principles, concepts and methodologies in animal reproduction 3.2 Apply the methodologies involved in reproductive cycle, rate of genetic improvement and developments in assisted reproductive technology (ART) and other biotechnological advances in animal agriculture 3.3 Assess the various methodologies in reproduction in relation to genetic improvement				1	2		1	
D. Animal Nutrition	**2.0**	**12**		**4**	**5**	**2**	**1**	
1. Terminologies, Concepts and Principles	0.33	2						
1.1. Describe the terminologies, concepts and				1				

principles in animal nutrition 1.2. Apply animal nutrition in relation to its concepts and principles					1			
2. Gross Chemical Composition, elemental and proximate	0.33	2						
2.1 Demonstrate the use of elemental and proximate composition of feeds 2.2 Breakdown the gross chemical composition of plants and animal tissues					1	1		
3. Nutrient Classification and Utilization	0.50	3						
3.1 Explain the processes involved in nutrient utilization and its importance 3.2 Demonstrate the importance of the classes of nutrients and the processes involved in nutrient utilization				1	2			
4. Feedstuff Classification and Examples	0.51	3						
4.1 Identify the classes of feedstuff and its examples 4.2 Demonstrate the use of feedstuff classification 4.3 Evaluate the utilization of the different classes of feedstuff				1	1		1	
5. Feed Formulation and Rations	0.33	2						
5.1 Describe feed formulation and rations 5.2. Analyze feed formulation and methods in compounding rations				1		1		
E. Slaughtering, Processing and Marketing of Animals and their Products	**1.33**	**8**	**1**	**2**	**3**	**1**	**1**	
1. Slaughtering and Meat Fabrication	0.33	2						
1.1 Describe the different procedures in slaughtering and meat fabrication				1				

1.2 Evaluate the procedures in slaughtering and meat fabrication							1	
2. Characteristics and Composition of Animal Products	0.33	2						
2.1 Identify the composition and value of meat, milk and eggs 2.2. Demonstrate the relationship of the composition and value of meat, milk, eggs using the common tests and general characteristics				1	1			
3. Principles of Proper Handling and Processing of Animal Products	0.34	2						
3.1 Apply the basic principles of proper handling and processing of meat, milk and eggs emphasizing on the methods of processing and causes of product deterioration					2			
4. Marketing of Live Animals and Livestock Products	0.33	2						
4.1 Distinguish the various marketing strategies and channels of live animals and livestock products 4.2. Assess the effectivity and efficiency of the various marketing strategies and channels of livestock and their products			1			1		
F. **Animal Production and Management**	**8.34**	**50**	**5**	**3**	**23**	**12**	**7**	
1. Poultry Production and Management	2.50	15						
1.1 Define common terminologies in poultry production 1.2 Identify the characteristics of different poultry species, their corresponding breeds and origins			1	1				

1.3 Apply the principles and practices in poultry production (chicken, ducks and other poultry species) with emphasis on broiler, layer and native chicken nutrient requirements at various stages of production 1.4 Analyze the care and management systems (breeding, feeding, health, housing, waste disposal and utilization and others) at the various stages of production 1.5 Assess the various care and management systems involved in the stages of production in relation to animal productivity					7	4	2	
2. Swine Production and Management	2.50	15						
2.1 Define common terminologies in swine production 2.2. Identify the different characteristics of swine species their breeds and origins 2.3 Apply swine production, principles and practices in the different breeds and their nutrient and other requirements at various stages of production 2.4. Analyze the various care and management systems (breeding, feeding, health, housing, waste disposal and utilization and others) during the different production stages 2.5 Assess the care and management systems during the various stages of growth to animal productivity			1	1	7	4	2	
3. Ruminant Production and Management	3.34	20						
3.1 Define common terminologies in ruminant production			3					

3.2 Describe the characteristics of the different ruminant species and their respective breeds and origins 3.3 Apply the principles and practices in ruminant production (cattle, carabao, goats and sheep) in the different breeds of the ruminant species and the nutrient and other requirements at the various stages of production 3.4 Analyze the different care and management systems (breeding, feeding, health, housing, waste disposal and utilization and others) during the various stages of production 3.5 Assess the differences in care and management systems during the various stages of production to the improvement in the production systems and animal productivity				1	9	4	3	
Total	**16.67**	**100**	**10**	**20**	**40**	**18**	**12**	

TABLE OF SPECIFICATIONS

Board of AGRICULTURE
Subject: AGRICULTURAL ECONOMICS AND MARKETING
Weight: 16.7%

PQF Level: 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt (%)	No. of Item						
The examinees can perform the following competencies under each topic:								
A. Introduction	**0.835**	**5**	**4**	**1**				
1. Definition, scope, nature and foundation of economics		5	4	1				
1.1 Define terms in economics		2	2					
1.2 Describe the nature, scope and foundation of economics		1		1				
1.3 Describe the major fields of study of agricultural economics		1	1					
1.4 Cite the economic ideologies of nations		1	1					
B. Microeconomics	**5.03**	**30**		6	13	11		
1. Production and Cost	0.334	2		1	1			
1.1 Explain the production function		1		1				
1.2 Apply the law of diminishing returns in agriculture		1			1			
2. Costs of production	0.835	5				5		
2.1 Examine the various factors of production		2				2		
2.2 Differentiate short run from long run condition		2				2		

2.3 Analyze the relationship of production costs to supply		1				1		
3. Demand	0.835	5		1	2	2		
3.1 Explain demand, its types and components		1		1				
3.2 Examine the demand determinants		2			2			
3.3 Differentiate change in quantity demanded vs. change in demand		2				2		
4. Supply	0.835	5		1	2	2		
4.1 Explain supply, its types and components		1		1				
4.2 Examine the supply determinants		2			2			
4.3 Differentiate change in quantity supplied vs. change in supply		2				2		
5. Elasticity	1.002	6			4	2		
5.1. Analyze the demand and supply elasticities and the factors affecting them		2				2		
5.2 Apply these concepts in government policies/programs aimed at increasing farmer's income		4			4			
6. Price and Output Determination	0.668	4		1	3			
6.1 Apply supply and demand interactions in determining price and output in the market		3			3			
6.2 Describe price and output determination in imperfectly competitive markets		1		1				

7. Consumption	0.501	3		2	1			
7.1 Explain the theory of consumer behavior and the law of diminishing marginal utility		2		2				
7.2 Demonstrate how to optimize consumer's satisfaction subject to production constraint and given income level		1			1			
C. Macroeconomics	**2.5**	**15**	1	4	10			
1. National Income Accounting	0.501	3			3			
1.1 Differentiate the various approaches to national income accounting		3			3			
2. Consumption, Savings and Investment	0.501	3		3				
2.1 Explain the consumption, saving and investment functions		3		3				
3. Unemployment and Inflation	0.501	3		1	2			
3.1 Examine employment, unemployment, and inflation		1		1				
3.2 Determine the causes and effects of unemployment and inflation and the measures to counteract them		2			2			
4. Monetary and Fiscal Policy	0.501	3			3			
4.1 Differentiate monetary from fiscal policy		1			1			
4.2 Demonstrate how monetary and fiscal policy are used to influence national income		2			2			
5. Money and Banking	0.501	3	1		2			
5.1 Define the role of money and the demand for it		1	1					

5.2 Determine the role of banking on money supply		2			2			
D. Agriculture and Economic Growth	**3.35**	**20**	1	6	3	7	3	
1. Definition of Terms	1.67	10		3		7		
1.1 Describe agriculture, intensive vs. extensive agriculture, sustainable development, economic growth, and economic development		3		3				
1.2 Identify the various strategies for promoting economic growth and development		3				3		
1.3 Determine the policies and programs for agricultural development and legal parameters		4				4		
2. International Economics	1.67	10	1	3	3		3	
2.1 Explain free trade and the basis of specialization		1	1					
2.2 Examine the barriers to trade (tariff and non-tariff) and their impact on agriculture		3			3			
2.3 Appraise effect of GATT-WTO and other stages of economic integration		3					3	
2.4 Describe the balance of payments and its parts		1		1				
2.5 Explain the balance of payments and foreign exchange		2		2				
E. Agricultural Marketing	**5.01**	**30**	4	7	7	12		
1. Introduction	2.171	13		4		9		
1.1 Discuss the terms used in agricultural marketing including		4		4				

the approaches to the study of agricultural marketing								
1.2 Examine the importance of the various marketing functions (transportation, storage, grading and standardization, packaging and labeling, and market intelligence)		6				6		
1.3 Analyze how the performance of these functions (storage, grading and standardization, packaging and labeling, and market intelligence) contribute to value addition and efficiency of the marketing system		3				3		
2. Marketing Margin and Cost	0.835	5	2			3		
2.1 Describe the types of marketing margin		2	2					
2.2 Analyze how marketing margins and costs affect the efficiency of the marketing system		3				3		
3. Marketing Program or the 4P's of Marketing	2.004	12	2	3	7			
3.1 Describe the types of product and strategies to achieve product quality		2	2					
3.2 Examine how price behaves over time, its operational aspects and pricing strategies adopted		4			4			
3.3 Describe the role of market intermediaries and the factors		3		3				

affecting choice of channels of distribution								
3.4 Examine the different types of promotion mix and how to effectively advertise agricultural products		3			3			
Total	**16.67**	**100**	**10**	**24**	**34**	**29**	**3**	

TABLE OF SPECIFICATIONS

Board of AGRICULTURE
Subject: AGRICULTURAL EXTENSION AND COMMUNICATION
Weight: 16.7%

PQF Level : 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt (%)	No. of Item						
The examinees can perform the following competencies under each topic:								
A. Overview of Agricultural Extension	**1.50**	**9**	**5**	**4**	**-**		**-**	**-**
1. Roots of agricultural extension	0.67	4	2	2				
1.1. Describe the historical antecedents of agricultural extension in Europe and the USA		4	2	2				
2. Agricultural extension in the local context	0.83	5	3	2				
2.1. Describe significant historical events related to agricultural extension in the Philippines		2	1	1				
2.2. Describe local policies and legal mandates related to agricultural extension		3	2	1				
B. Theoretical and Practical Frameworks of Agricultural Extension	**3.34**	**20**	**-**	**-**	**8**	**6**	**6**	**-**
1. Extension Approaches/Models	1.34	8			8			
1.1. Apply the approaches in agricultural extension		8			8			
2. Extension Methods and Techniques	2.00	12				6	6	
2.1 Analyze the various extension methods and techniques used in different contexts		6				6		
2.2. Assess the effectiveness of agricultural extension methods and techniques		6					6	
C. Practice of Agricultural Extension	**1.50**	**9**	**-**	**4**	**5**	**-**	**-**	**-**
1. Roles and Functions in Extension	1.50	9		4	5			
1.1. Explain the primary responsibilities of an agricultural extension worker		4		4				
1.2. Demonstrate how the roles and functions of an agricultural extension worker are applied in particular situations		5			5			
D. Attributes of Technology	**1.34**	**8**	**4**	**4**	**-**	**-**	**-**	**-**
1. Types and characteristics of technology	1.34	8	4	4				

1.1. Describe the key characteristics of modern agricultural technologies		4	4					
1.2. Explain the categories of agricultural technologies.		4		4				
E. Communication in Extension	**3.34**	**20**	**-**	**-**	**11**	**9**	**-**	**-**
1. Elements of communication process	1.51	9			5	4		
1.1 Apply the elements of communication process in designing effective communication strategies		5			5			
1.2 Analyze the role of effective feedback mechanisms within the communication process		4				4		
2. Models of communication	1.00	6			3	3		
2.1. Utilize models of communication for diverse farming communities		3			3			
2.2. Analyze effectiveness of communication models in conveying agricultural concepts to farmers		3				3		
3. Communication strategies	0.80	5			3	2		
3.1 Apply appropriate communication strategies to address specific challenges in extension		3			3			
3.2. Analyze the effectiveness of different communication strategies in achieving specific extension goals		2				2		
F. Technology Diffusion and Adoption Process	**2.00**	**12**	**-**	**2**	**6**	**4**	**-**	**-**
1. Diffusion and adoption process	1.00	6			4	2		
1.1. Apply diffusion theories and models in determining adoption patterns		4			4			
1.2. Analyze the stages in the diffusion and adoption processes		2				2		
2. Adopter categories	1.00	6		2	2	2		
2.1 Explain the categories of adopters according to their characteristics		2		2				
2.2 Apply knowledge of adopter categories to tailor adoption campaigns to target groups		2			2			
2.3 Examine case studies to assess effectiveness of adopter category-based approaches in driving technology adoption		2				2		
G. Program Planning, Monitoring, and Evaluation	**1.67**	**10**	**-**	**3**	**2**	**-**	**4**	**1**
1. Program planning in agricultural extension	0.50	3		2				1

1.1. Describe key concepts and approaches associated with program planning		2		2				
1.2. Develop a program plan involving local people and resources		1						1
2. Monitoring and evaluation (M&E) of agricultural extension programs	1.17	7		1	2		4	
2.1 Define concepts of M&E in agricultural extension programs		1		1				
2.2 Assess effectiveness of extension program using evaluation models and methods		6			2		4	
H. Adult Teaching and Learning	**2.00**	**12**	**-**	**4**	**8**	**-**	**-**	**-**
1. Andragogy theory and principles	1.34	8		2	6			
1.1. Distinguish principles of andragogy from pedagogy		2		2				
1.2 Apply theory, methods, and principles in adult education		6			6			
2. Andragogy models	0.66	4		2	2			
2.1 Explain key components and principles of andragogical teaching and learning models		2		2				
2.2 Apply andragogy models in implementing adult education programs		2			2			
			9	**21**	**40**	**19**	**10**	**1**
Total (for 100 Items)	**16.70**	**100**	**30/30**		**40/40**	**30/30**		