

AL/2016/08/E-I

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 இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம்  
 Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka  
 ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව  
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අධ්‍යයන පොදු සහතික පත්‍ර (උසස් පෙළ) විභාග, 2016 අගෝස්තු  
 கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2016 ஆகஸ்ட்  
 General Certificate of Education (Adv. Level) Examination, August 2016

කෘෂි විද්‍යාව I  
 விவசாய விஞ்ஞானம் I  
 Agricultural Science I

08 E I

පැය දෙකයි  
 இரண்டு மணித்தியாலம்  
 Two hours

## Instructions:

- \* Answer **all** the questions.
- \* Write your **Index Number** in the space provided in the answer sheet.
- \* Instructions are given on the back of the answer sheet. Follow those carefully.
- \* In each of the questions **1 to 50**, pick one of the alternatives from (1), (2), (3), (4), (5) which is **correct or most appropriate** and mark your response on the answer sheet with a cross (X) on the number of the correct option in accordance with the instructions given on the back of the answer sheet.

1. The amount of water in ancient tanks was measured by the
  - (1) Spill gate.
  - (2) Sluice gate.
  - (3) Silt trap (*Bisokotuwa/Kalingat thotti*).
  - (4) Riprap (*Ralapanawa/Alai thanki*).
  - (5) Aqua duct stone (*Diyakatapahana/Neer murippu kal*).
2. The pH value of 5.0 in a soil indicates that the soil reaction is
  - (1) acidic.
  - (2) neutral.
  - (3) alkaline.
  - (4) highly acidic.
  - (5) highly alkaline.
3. An example for a primary land preparation implement is
  - (1) leveller.
  - (2) rotavator.
  - (3) disc plough.
  - (4) disc harrow.
  - (5) tooth harrow.
4. Commonly practiced method to induce roots is
  - (1) pruning.
  - (2) girdling.
  - (3) grafting.
  - (4) budding.
  - (5) layering.
5. Gaseous loss of fertilizer nitrogen from soil in a paddy field under anaerobic environment is caused by
  - (1) fixation.
  - (2) nitrification.
  - (3) volatilization.
  - (4) denitrification.
  - (5) ammonification.
6. Earthworms present in the soil
  - (1) reduce soil fertility.
  - (2) increase soil fertility.
  - (3) harm the plants.
  - (4) cause diseases in plants.
  - (5) create nutrient deficiency in plants.
7. The mean annual rainfall of a farm located in mid country wet zone is more than 3,300 mm. The agro-ecological region of this farm would be
  - (1) IL1c.
  - (2) IM2b.
  - (3) WL1a.
  - (4) WU2b.
  - (5) WM1a.
8. The most suitable propagation structure for rooting of cuttings would be
  - (1) lath house.
  - (2) poly tunnel.
  - (3) green house.
  - (4) mist propagator.
  - (5) solar radiator house.
9. Cell elongation in internodal regions of the green plants takes place due to
  - (1) Cytokinin.
  - (2) Ethylene.
  - (3) Gibberellins.
  - (4) Abscisic acid.
  - (5) Indole acetic acid.
10. The colour of the bottom boarder in the label of a bottle containing the insecticide monocrotophos should be
  - (1) red.
  - (2) blue.
  - (3) green.
  - (4) white.
  - (5) yellow.

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11. Tetrazolium Chloride (TZ) test is done to test  
 (1) seed viability. (2) seeds development.  
 (3) the amount of cross pollination. (4) seed dormancy.  
 (5) seed maturity.
12. An example for a heterozygous but homogeneous population is  
 (1) Clone. (2) Pure line. (3) Hybrid variety.  
 (4) Synthetic variety (5) Open pollinated variety.
13. An example for an *ex-situ* conservation of plant genetic resources is  
 (1) Yala sanctuary. (2) Sinharaja forest.  
 (3) Mahameuwana Uyana. (4) Nilgala medicinal forest.  
 (5) Haggala botanical garden.
14. An insecticide that was restricted in use in Sri Lanka due to suspected contribution to Chronic Kidney Disease of uncertain etiology (CKDu) is  
 (1) Propanil. (2) Paraquat. (3) Pyrethroid. (4) Carbofuran. (5) Glyphosate.
15. Exclusion of plant disease by legislation is known as  
 (1) cultural control. (2) chemical control.  
 (3) plant quarantine. (4) biological control.  
 (5) disease resistance.
16. A breeding technique that can be used to improve the production potential of a farm animal within the shortest period of time is  
 (1) selection. (2) inbreeding.  
 (3) line breeding. (4) cross breeding.  
 (5) a combination of line breeding and selection.
17. Some examples for protein supplements used in poultry feeds are  
 (1) rice polish, sorghum and broken rice.  
 (2) soybean meal, fish meal and meat meal.  
 (3) maize meal, soybean meal and rice bran.  
 (4) fish meal, dry fish powder and bone meal.  
 (5) soybean meal, coconut poonac and *ipilipil* leaf meal.
18. Some breeds of chicken belonging to 'American Class' are  
 (1) White Plymouth Rock, Brahma and Amrock.  
 (2) White Leghorn, Brown Leghorn and Ancona.  
 (3) Cornish, White Plymouth Rock and Light Sussex.  
 (4) Rhode Island Red (RIR), Australop and New Hampshire.  
 (5) Rhode Island Red (RIR), New Hampshire and White Plymouth Rock.
19. The optimum number of laying nests required for a flock of 1000 layers is  
 (1) 50. (2) 100. (3) 150. (4) 200. (5) 250.
20. In a cattle farm, the age of the calves to introduce roughage is  
 (1) one month. (2) two months. (3) three months.  
 (4) four months. (5) five months.
21. Milk fever is a  
 (1) viral disease. (2) parasitic disease. (3) bacterial disease.  
 (4) metabolic disease. (5) deficiency disease.
22. The hormone affecting the milk let down in a dairy cow is  
 (1) insulin. (2) oestrogen. (3) oxytocin.  
 (4) prolactin. (5) progesterone.
23. The correct statement regarding edible lipid is,  
 (1) Cholesterol is rich in plant based oils.  
 (2) Coconut oil is rich in unsaturated fatty acids.  
 (3) Polyunsaturated fatty acids promote human health.  
 (4) All fatty acids must be necessarily taken through food.  
 (5) Milk fat does not promote production of bad cholesterol in human.

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24. The "Corporate Social Responsibility (CSR)" of an enterprise is known as
- (1) honesty in all business activities.
  - (2) development of partnerships with state sector.
  - (3) contribution to the sustainable development of the society.
  - (4) carrying out business activities with least damage to the environment.
  - (5) allocation of significant amount of money for research and development.
25. If a new production procedure reduces the cost of production of yoghurt, then
- (1) both demand and supply curves of yoghurt shifts right.
  - (2) the demand curve of yoghurt shifts right but the supply curve shifts left.
  - (3) the demand curve of yoghurt shifts left but the supply curve shifts right.
  - (4) there will be no change in the demand curve of yoghurt but the supply curve shifts left.
  - (5) there will be no change in the demand curve of yoghurt but the supply curve shifts right.
26. Consider the following acts/ordinances related to Agriculture.
- A - Seed Act No. 22 of 2003  
 B - Agrarian Development Act No. 46 of 2000  
 C - Plant Protection Act No. 35 of 1999  
 D - Soil Conservation Act No. 24 of 1996
- Of these, the Acts regulated by the Department of Agriculture are
- (1) A, B and C only.
  - (2) A, B and D only.
  - (3) A, C and D only.
  - (4) B, C and D only.
  - (5) All A, B, C and D.
27. Of the following, the correct statement would be
- (1) atmospheric air does not contain water vapour.
  - (2) air can hold more water vapour during the night.
  - (3) warm air can hold more water vapour than cool air.
  - (4) cool air can hold more water vapour than warm air.
  - (5) cool air and warm air always hold the same amount of water vapour.
28. Following are some factors affecting the soil.
- A - Heavy rainfall  
 B - Application of inorganic fertilizer  
 C - Shifting cultivation
- Of the above, soil acidification could take place due to
- (1) A only.
  - (2) B only.
  - (3) A and B only.
  - (4) B and C only.
  - (5) All A, B and C.
29. Iron and molybdenum are important for
- (1) protein synthesis and respiration, respectively.
  - (2) water absorption and grain filling, respectively.
  - (3) lipid biosynthesis and enzyme activation, respectively.
  - (4) ATP formation, and chlorophyll synthesis, respectively.
  - (5) chlorophyll synthesis and nitrogen fixation, respectively.
30. The most accurate statement on soil pH would be
- (1) it has no influence on the crop growth.
  - (2) solubility of N is reduced when soil pH is lower than 4.
  - (3) solubility of Al and Fe increases with the decrease of soil pH.
  - (4) it has no influence on the absorption of plant nutrients by the crop.
  - (5) it is important to have soil with pH higher than 7 to grow most of the crops.
31. The correct statement regarding organic fertilizer would be,
- (1) it releases nutrients quickly.
  - (2) it cannot be applied for lowland rice crop.
  - (3) it should not be applied together with inorganic fertilizer.
  - (4) its nutrient content is higher than that in inorganic fertilizer.
  - (5) it increases fertilizer use efficiency of inorganic fertilizer when applied together.

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32. Following are some statements regarding nursery beds.  
 A - Sand bed nurseries are mainly used for seed propagation.  
 B - Raised bed nurseries are mainly used during the wet seasons.  
 C - Sunken bed nurseries are common in up country area.
- Of the above, the correct statement/s would be  
 (1) A only. (2) A and B only. (3) A and C only.  
 (4) B and C only. (5) All A, B and C.
33. Following are some statements regarding micro-irrigation.  
 A - Increases crop productivity with less water use.  
 B - Enhances fertilizer use efficiency.  
 C - Reduces insect pest attacks in crops.
- Of the above the benefit/s of micro-irrigation is/are  
 (1) A only. (2) B only. (3) C only. (4) A and B only. (5) B and C only.
34. The correct statement in relation to drip irrigation would be,  
 (1) It is suitable for dry soils.  
 (2) It helps in wetting the whole plant.  
 (3) It is highly effective for crops cultivated in sandy soils.  
 (4) Irrigation water used should be free of sediments.  
 (5) It is most suitable for crops established with broadcasted seeds.
35. A suitable drainage system controls the water level in the soil of an agricultural land. The objective of this is to  
 (1) increase the soil pH.  
 (2) reduce the weed growth.  
 (3) improve the soil nutrients.  
 (4) maintain the field capacity of the soil.  
 (5) increase the population of aerobic soil microorganisms.
36. The correct statement regarding the plant propagation would be  
 (1) Seed propagated plants produced genetically true to type plants.  
 (2) Micro-propagation is not considered as a vegetative propagation method.  
 (3) Vegetatively propagated plants mature earlier than seed propagated plants.  
 (4) Propagation of potato by seed tubers is considered as a seed propagation method.  
 (5) Propagation of crops through synthetic seeds is considered as a seed propagation method.
37. The most influencing factors on seed germination are  
 (1) seed viability and seed size.  
 (2) seed shape and 100 seed weight.  
 (3) seed dormancy and 100 seed weight.  
 (4) seed size and the moisture content of the seed.  
 (5) seed viability and moisture content of the seed.
38. In a  $C_4$  plant  
 (1) carboxylating enzyme is PEP carboxylase.  
 (2) photorespiration is enhanced due to RuBP oxidase.  
 (3) the first detectable compound is oxaloacetic acid.  
 (4) a taproot system is present and leaf venation is parallel.  
 (5) productivity under resource poor conditions is low compared to  $C_3$  plants.
39. It has been observed that when a pesticide is repeatedly used over a period of several years it gradually loses its effectiveness in killing pest species. The best explanation for this is  
 (1) Any chemical loses its potency after a time due to the breakdown of chemical molecules.  
 (2) Pesticide manufacturers tend to make it more and more diluted so as to maximize their profits.  
 (3) The genetically resistant members of the pest species survive and reproduce a population which is more resistant to the pesticide.  
 (4) Insect species learn to avoid areas where pesticides have been applied and are therefore not exposed to as much of the chemical.  
 (5) The insects gradually become immune to the effects of the poison, just as humans become immune by vaccination against a disease.

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## 40. Mycorrhiza

- A - aid plants in acquiring mineral nutrients.  
 B - receive carbohydrates from the plant.  
 C - increase the ability of plants to successfully grow in poor soil.

Of the above, correct statement/s would be

- (1) A only. (2) B only. (3) A and B only.  
 (4) A and C only. (5) All A, B and C.

## 41. The invasive alien plants identified in Sri Lanka are

- (1) *Mimosa pigra* and *Eichhornia crassipes*.  
 (2) *Ischaemum rugosum* and *Mimosa pigra*.  
 (3) *Cyperus rotundus* and *Ischaemum rugosum*.  
 (4) *Echinochloa crus-galli* and *Cyperus rotundus*.  
 (5) *Echinochloa crus-galli* and *Eichhornia crassipes*.

## 42. The following are some factors regarding post-harvest losses of big onion.

- A - Grading and selection of harvested onion.  
 B - Fluctuation of relative humidity inside the warehouse.  
 C - Germination of onions during storage.  
 D - Poor cropland irrigation management.  
 E - Amount of microorganisms present in onions.

Of the above, possible pre-harvest, internal and external factors would be

- (1) D, E and A respectively. (2) B, A and C respectively.  
 (3) D, C and B respectively. (4) E, B and C respectively.  
 (5) D, E and B respectively.

## 43. Following are some statements regarding the growth phases of rice plant.

- A - Length of the vegetative phase varies from variety to variety.  
 B - Reproductive phase commences at maximum tillering and lasts till fertilization.  
 C - Ripening phase commences with fertilization and its duration is generally 30 days.

Of the above the correct statement/s would be

- (1) A only. (2) B only. (3) C only. (4) A and B only. (5) A and C only.

## 44. Following are some crops that found in a home garden.

- A - Leafy vegetables  
 B - Foliage plants  
 C - Yam  
 D - Manioc  
 E - Anthurium  
 F - Jack fruit

Of the above, crops that ensure food security are

- (1) A, B, C and D only. (2) A, C, D and E only. (3) A, C, D and F only.  
 (4) B, D, E and F only. (5) C, D, E and F only.

## 45. A main potential to develop dairy industry in Sri Lanka is

- (1) availability of grasslands.  
 (2) high profitability of dairy farming.  
 (3) high demand for milk and milk products.  
 (4) readily availability of high yielding breeding animals.  
 (5) restrictions imposed on importation on milk powder.

## 46. Following are some statements on the effect of climate on farm animals.

- A - Broiler birds do panting and sweating when they are under hot environments.  
 B - Animals usually drink more water and eat less food due to heat stress.  
 C - Effect of environmental temperature on animals is higher at high humidity conditions.  
 D - Animals can tolerate cold environments more easily than hot environments.

Of the above, the correct statements are

- (1) A and B only. (2) C and D only. (3) A, B and C only.  
 (4) B, C and D only. (5) All A, B, C and D.

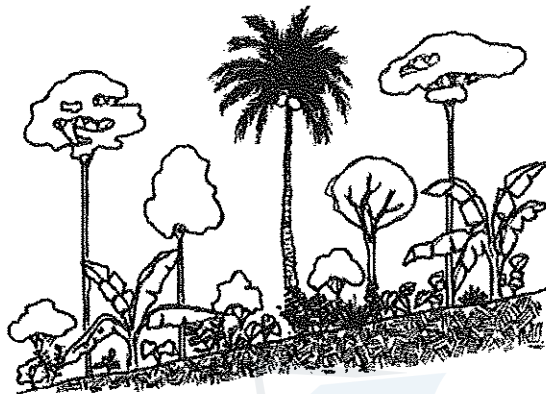
47. The following are some statements regarding food additives.

- A - Antioxidants help to retard rancidity development in oily foods.
- B - Monosodium glutamate is a flavour enhancer and an antioxidant.
- C - Four different colours have been identified as permitted food colourants.
- D - Sodium benzoate and sodium metabisulphite are permitted food preservatives.

Of the above, the correct statements are

- (1) A, B and C only.
- (2) B, C and D only.
- (3) A, C and D only.
- (4) A, B and D only.
- (5) All A, B, C and D.

● Use the following diagram to answer question No. 48.



48. This cropping system is

- (1) eco-friendly as it has a perfect ground cover.
- (2) not eco-friendly as it is cultivated on a slope land.
- (3) eco-friendly as it shows multi-storied cropping system.
- (4) a crop rotation as it contains many different crops species.
- (5) not eco-friendly as it contains many annual or semi perennial crops.

49. Following are some statements regarding monopoly and perfect competition.

- A - The commodity price under monopoly is lower than that of perfect competition.
- B - The commodity price under monopoly is higher than that of perfect competition.
- C - The quantity produced under monopoly is lower than that of perfect competition.
- D - The quantity produced under monopoly is higher than that of perfect competition.

Of the above, the correct statements are

- (1) A and B only.
- (2) A and C only.
- (3) A and D only.
- (4) B and C only.
- (5) B and D only.

50. If the percentage change in quantity demanded is less than the percentage change in price, then the demand is

- (1) elastic.
- (2) inelastic.
- (3) unit elastic.
- (4) zero elastic.
- (5) perfectly elastic.

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 Department of Examinations, Sri Lanka

**අධ්‍යයන පොදු භාගික පෙළ (උසස් පෙළ) විභාගය, 2016 අගෝස්තු**  
**கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2016 ஆகஸ்ட்**  
**General Certificate of Education (Adv. Level) Examination, August 2016**

කෘෂි විද්‍යාව II  
 விவசாய விஞ்ஞானம் II  
**Agricultural Science II**

**08 E II**

පැය තුනයි  
 மூன்று மணித்தியாலம்  
**Three hours**

Index No. : .....

**Instructions:**

- \* This question paper consists of 10 questions in 08 pages.
- \* This question paper comprises Part A and Part B. The time allotted for both parts is three hours.

**PART A – Structured Essay (Pages 2 -7)**

- \* Answer all four questions on this paper itself.
- \* Write your answers in the space provided for each question. Note that the space provided is sufficient for your answers and extensive answers are not expected.

**PART B – Essay (Page 8)**

- \* Answer four questions only. Use the papers supplied for this purpose. At the end of the time allotted for this paper, tie the two parts together so that Part A is on the top of Part B before handing over to the supervisor.
- \* You are permitted to remove only Part B of the question paper from the Examination Hall.

**For Examiners' Use only**

(08) Agricultural Science - II		
Part	Question No.	Marks
A	1	
	2	
	3	
	4	
B	5	
	6	
	7	
	8	
	9	
	10	
<b>Total</b>		
<b>Percentage</b>		

**Final Marks**

In Numbers	
In Letters	

**Code Numbers**

Marking Examiner 1	
Marking Examiner 2	
Marks checked by	
Supervised by	

[see page two

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**Part A - Structured Essay**  
*Answer all questions on this paper itself.*  
*(Each question carries 10 marks.)*

Do not write in this column

1. (A) Agricultural sector is the backbone of the Sri Lankan economy.
- (i) List **three** main sectors in agriculture that contribute to Gross Domestic Product (GDP).
- (1) .....
- (2) .....
- (3) .....
- (ii) State **two** main challenges faced by the agricultural sector in Sri Lanka.
- (1) .....
- (2) .....
- (B) Sri Lanka is divided into 46 agro-ecological zones.
- (i) State **two** uses of this classification.
- (1) .....
- (2) .....
- (ii) State the number of agro ecological zones found in following main climatic zones.
- (1) Wet zone: .....
- (2) Dry zone: .....
- (C) State the importance of rectifying soil pH.
- .....
- .....
- .....
- (D) Name **two** bacteria that are responsible for denitrification in soil.
- (i) .....
- (ii) .....
- (E) State **two** impacts of irregular water management practices on soil degradation.
- (i) .....
- (ii) .....
- (F) State **three** soil factors that affect soil quality.
- (i) .....
- (ii) .....
- (iii) .....
- (G) State **two** criteria used to identify an essential plant nutrient.
- (i) .....
- (ii) .....
- (H) State **two** main differences between aerobic and anaerobic compost preparations.
- (i) .....
- (ii) .....

[see page three



Do not write in this column

(I) Indicate whether the following statements are **true** (T) or **false** (F).

- (i) Micro-nutrients are required in small quantities, because they are needed only for growing parts of the plants. (.....)
- (ii) Ammonium sulfate has the highest percentage of nitrogen among all nitrogen-fertilizers used in rice cultivation in Sri Lanka. (.....)
- (iii) **B** horizon of a soil profile is the sub-surface horizon that accumulates organic matter and clay. (.....)
- (iv) Essential macro-nutrients of plants are absorbed not only from soil. (.....)

2. (A) Proper nursery management is important in commercial agriculture.

(i) State **two** soil sterilization methods that are used in nursery bed preparation.

- (1) .....
- (2) .....

(ii) State a suitable type of nursery bed for each of the following areas.

- (1) Nuwara-Eliya .....
- (2) Dambulla .....

(B) Irrigation systems of crop fields need to be carefully designed to maintain high level of irrigation efficiency.

(i) List **three** main factors to be considered in selecting an irrigation system for an annual crop.

- (1) .....
- (2) .....
- (3) .....

(ii) State **two** important factors in deciding the irrigation interval for a crop.

- (1) .....
- (2) .....

(C) Asexual propagation is common in commercial floriculture.

(i) State **two** main advantages of asexual propagation.

- (1) .....
- (2) .....

(ii) Name the **two** different plant parts (ex-plants) that can be used in tissue culture.

- (1) .....
- (2) .....

(iii) State **three** natural vegetative propagation methods commonly used in Sri Lanka.

- (1) .....
- (2) .....
- (3) .....

[see page four

Do not write in this column

(D) Seed dormancy is considered as an evolutionary adaptation of plants to overcome adverse weather conditions. State **two** internal factors affecting seed dormancy.

(i) .....

(ii) .....

(E) (i) Define self-pollination.

.....  
.....

(ii) Explain the following:

(1) *In-situ* conservation of genetic resources

.....  
.....  
.....

(2) *Ex-situ* conservation of genetic resources.

.....  
.....  
.....

(F) State **one** advantage and **one** disadvantage of using polytunnels for growing crops.

(i) Advantage of a polytunnel :

.....

(ii) Disadvantage of a polytunnel :

.....

(G) Crop-livestock integration is a sustainable farming system. State the contribution of each of the following components to the sustainability of the system.

(i) Crop :

.....  
.....

(ii) Livestock :

.....  
.....



[see page five

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3. (A) Photosynthesis is the most important phenomena for the survival of the life on the earth.

(i) Name the cellular organelle of a plant that the light reaction of photosynthesis takes place.

.....

(ii) List the **three** steps of dark reaction in photosynthesis.

(1) .....

(2) .....

(3) .....

(B) Plant diseases have become a serious problem in crop production.

(i) List the **three** components in the disease triangle.

(1) .....

(2) .....

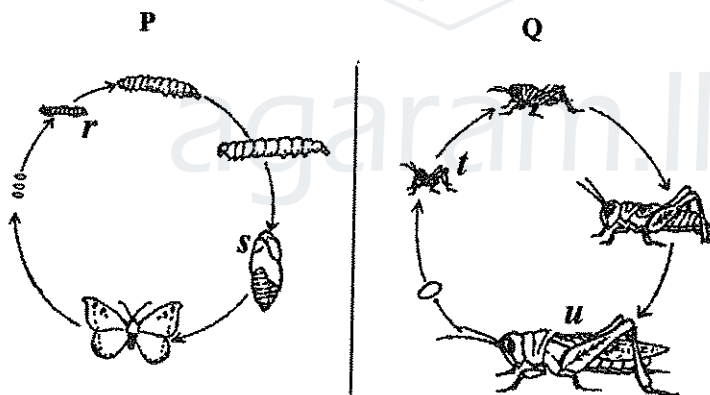
(3) .....

(ii) Indicate the following statements as **true (T)** or **false (F)**.

(1) Excessive nitrogen can make plants more susceptible to diseases. (.....)

(2) A major reason for avoiding late afternoon watering is to reduce disease occurrence. (.....)

(C) Use following diagram to answer questions (i) to (ii).



(i) Name the process in **P** and **Q**.

(1) **P** : .....

(2) **Q** : .....

(ii) Name the following stages.

(1) **r** : .....

(2) **s** : .....

(3) **t** : .....

(4) **u** : .....

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Do not write in this column

(D) State **two** advantages and **two** disadvantages of transplanting of rice, compared to broadcasting.

(i) Advantages

(1) .....

(2) .....

(ii) Disadvantages

(1) .....

(2) .....

(E) State **two** practices leading to postharvest losses of perishables at the retail stores.

(i) .....

(ii) .....

(F) State **two** physical and **two** chemical factors leading to spoilage of foods.

(i) Physical factors

(1) .....

(2) .....

(ii) Chemical factors

(1) .....

(2) .....

4. (A) State **two** adaptations of indigenous cattle to hot environments.

(i) .....

(ii) .....

(B) State **two** advantages and **two** disadvantages of inbreeding of animals.

(i) Advantages

(1) .....

(2) .....

(ii) Disadvantages

(1) .....

(2) .....

(C) In making grass silage, a farmer cut grass and filled the silo by applying rice bran on grass layers and pressing firmly. Finally, the silo was well-covered with polythene. State the main reason for each of following activities.

**Activity**

**Main reason**

(i) Application of rice bran: .....

(ii) Pressing the grass: .....

(iii) Covering it by polythene: .....

[see page seven



(D) Followings are different parts of the digestive tract of a cow. Name the part of the digestive tract of the chicken that is similar to each of the part of the digestive tract of the cow in their main digestive function.

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**Cow digestive tract**

**Chicken digestive tract**

- (i) Mouth .....
- (ii) Rumen .....
- (iii) Duodenum .....

(E) Write the main reason for **not** selecting each of the following eggs for incubation.

**Reason for rejection**

- (i) Too small eggs .....
- (ii) Too large eggs .....
- (iii) Dirty eggs .....
- (iv) Round eggs .....

(F) State **two** advantages/reasons for feeding colostrum to calves.

- (i) .....
- (ii) .....

(G) State **two** common symptoms of a sick animal.

- (i) .....
- (ii) .....

(H) What is the main use of having a business plan for an agri-business project?

.....

(I) The following table represents different parts of a production process. Fill in the blanks.

No. of units of variable input	Total Product (TP)	Marginal Product (MP)	Average Product (AP)
3	(i) .....	unknown	30
4	(ii) .....	18	(iii) .....
5	120	12	(iv) .....

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සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව  
 இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம்  
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අධ්‍යයන පොදු හයවන පෙළ (උසස් පෙළ) විභාග, 2016 අගෝස්තු  
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 விவசாய விஞ்ஞானம் II  
 Agricultural Science II

08 E II

### Part B - Essay

#### Instructions:

- \* Answer **four** questions only.
- \* Give clearly labelled diagrams where necessary.
- Each question carries **15** marks.

5. (i) Describe the impact of climate change on agricultural productivity in Sri Lanka.  
 (ii) Describe with examples, the importance of maintaining different types of records in a dairy farm.  
 (iii) Explain the importance of adding value to the agricultural products and processing of diversified foods.
6. (i) Explain the role of microorganisms in improving soil fertility.  
 (ii) Describe the contributions to the national economic development by the agricultural development programmes implemented in Sri Lanka.  
 (iii) "The agricultural production should aim at not only for import substitution but also for export promotion". Write an essay to support this argument.
7. (i) Explain the factors affecting pH of the soil.  
 (ii) Describe advantages and disadvantages of surface irrigation systems used in the dry zone of Sri Lanka.  
 (iii) Describe the safety measures to be followed in applying pesticides to a crop field.
8. (i) Describe the potential of protected agriculture in Sri Lanka.  
 (ii) Explain the mechanism of milk let down of a dairy cow, with the help of a clearly labelled diagram.  
 (iii) Explain how application of organic matter to the soil helps sustainable crop production.
9. (i) Stating advantages and disadvantages, describe the different systems of rearing chicken.  
 (ii) Explain the importance of secondary land preparation in agriculture.  
 (iii) Explain the involvement of gibberellins on plant growth and development.
10. (i) Describe 'Integrated Weed Control'.  
 (ii) Explain how conservation agriculture practices could affect the food security in Sri Lanka.  
 (iii) Explain the reasons for high post-harvest losses of vegetables in Sri Lanka and, state the methods to be adopted to minimize losses.

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