අධ්‍යාපන පොදු සහතික පත්‍ර (උසස් පෙළ) විභාගය, 2017 අගෝස්තු
கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2017 ஓகஸ்ற்
General Certificate of Education (Adv. Level) Examination, August 2017

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*** (×) *on the number of the correct option in accordance with the instructions given on the back of the answer sheet.*

1. Most of the work of mixing humus within the soil is done by
(1) ants. (2) fungi. (3) bacteria. (4) termites. (5) earthworms.

2. Soil genesis begins with the weathering of
(1) litter. (2) humus. (3) bedrock.
(4) C horizon. (5) organic matter.

3. The soil bulk density is widely used to estimate soil
(1) texture. (2) porosity. (3) structure.
(4) mineral content. (5) microbial activity.

4. With the application of organic matter to the soil,
(1) physical properties of the soil are weaken.
(2) cation exchange capacity is increased.
(3) absorption of inorganic nutrients is hindered.
(4) particle density of the soil is increased.
(5) nutrients in the soil get converted into insoluble form.

5. The most suitable type/s of nursery bed/s for low country wet zone is/are
(1) raised beds. (2) flat beds.
(3) sunken beds. (4) sunken beds and flat beds.
(5) raised beds and flat beds.

6. The highest 'field water efficiency' could be achieved from
(1) basin irrigation. (2) furrow irrigation. (3) sprinkler irrigation.
(4) drip irrigation. (5) strip irrigation.

7. If the net irrigation requirement of a particular crop is 10 mm per day and the efficiency of irrigation is 50%, gross irrigation requirement per day would be
(1) 05 mm (2) 10 mm (3) 15 mm (4) 20 mm (5) 25 mm

8. Seed dormancy helps
(1) seeds to reduce viability.
(2) development of healthy seeds.
(3) the plants to protect from pest attacks.
(4) preventing deterioration of seeds.
(5) the plants to overcome unfavourable weather condition.

9. When seed is sown into soil, first thing it does is
(1) burst apart. (2) take up water.
(3) take up oxygen. (4) commence photosynthesis.
(5) take up carbon dioxide.

[See page two

10. For all the photosynthetic activities are to be stopped, the gas that disappears from the atmosphere would be
(1) oxygen. (2) helium. (3) nitrogen. (4) hydrogen. (5) carbon dioxide.

11. The process of respiration in green plants occurs
(1) at all times.
(2) only when stomata are opened.
(3) only when stomata are closed.
(4) only when photosynthesis ceases.
(5) only when photosynthesis is in progress.

12. Transpiration is least when
(1) wind velocity is high.
(2) dry weather prevails.
(3) the soil is in field capacity.
(4) atmospheric humidity is high.
(5) the ambient temperature is high.

13. The major component of Boudreaux mixture is
(1) sodium chloride.
(2) copper sulphate.
(3) calcium chloride.
(4) potassium chloride.
(5) magnesium sulphate.

14. A particular herbicide remains active in the soil for a longer period after the application. This herbicide can be best described as
(1) contact.
(2) selective.
(3) systemic.
(4) pre-emergence.
(5) post-emergence.

15. A student found a weed plant with narrow upright leaves containing parallel veins running the length of the leaf and having a fibrous root system. This weed could be
(1) *Acalypha indica*.
(2) *Aerva lanata*.
(3) *Amaranthus viridis*.
(4) *Crotalaria juncea*.
(5) *Axonopus compressus*.

16. Root knot diseases of vegetable crops are caused by
(1) *Meloidogyne*.
(2) *Heterodera*.
(3) *Pratylenchus*.
(4) *Xanthomonas*.
(5) *Phytopthera*.

17. The main advantage of using Dapog nursery in rice cultivation is
(1) seedlings are short.
(2) quantity of seeds required is less.
(3) keeping time of the seedlings in the seedbed is reduced.
(4) water management in the field is **not** required.
(5) number of seedlings per hill can be easily controlled.

18. A farm uses the inputs provided by various industries. Out of the following input industries found in Sri Lanka, an example for a natural monopoly is
(1) fertilizer industry.
(2) poultry feed industry.
(3) agrochemicals industry.
(4) electrical power industry.
(5) agricultural machinery industry.

19. Rainfall in Sri Lanka has multiple origins. Major origins of Sri Lankan annual rainfall are
(1) Convective, Orographic and Strati-form rain
(2) Orographic, Monsoonal and Convective rain
(3) Monsoonal, Convectional and Orographic rain.
(4) Strati-form, Convectional and Expressional rain.
(5) Monsoonal, Convectional and Expressional rain.

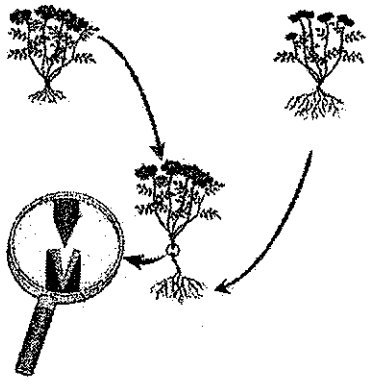
20. Crop water requirement mainly depend on
(1) climate, type of crop and type of soil.
(2) type of crop, type of soil and slope of the land.
(3) climate, irrigation interval and slope of the land.
(4) wind velocity, day length and duration of the crop in the field.
(5) irrigation interval, duration of the crop and day length.

[*See page three*

21. Major objectives of the land preparation are
(1) to increase bulk density of the soil, decrease soil pH value and improve the drainage.
(2) to control weeds, improve the drainage and increase the soil aeration.
(3) to improve the true density of the soil, control weeds and control pests and diseases.
(4) to increase the soil aeration, improve the true density of the soil and decrease the soil pH value.
(5) to control pests and diseases, improve water holding capacity and increase bulk density of the soil.

22. A farmer wanted to prepare seeds of a particular crop for germination. He removed seeds from a fresh ripen fruit, squeezed the seeds from the jelly bag that covers each seed and dried them in a shady place. This crop should be
(1) mango. (2) melon. (3) papaya. (4) orange. (5) cucumber.

● Use the following diagram to answer question No. **23**.



23. This vegetative propagation technique is called
(1) air layering.
(2) approach grafting.
(3) wedge grafting.
(4) tongue grafting.
(5) patch budding.

24. The types of gametes produce by a plant having genotype Gg Ww would be,
(1) GG, Gg, gg. (2) WW, Ww, ww. (3) Gw, GG, GW, WW
(4) GG, WW, gg, ww. (5) GW, gw, gW, Gw.

25. The most appropriate methods to control light and temperature in a poly tunnel established in low country in Sri Lanka are
(1) use of shade nets and misters, respectively.
(2) use of UV treated polythene and shade nets, respectively.
(3) use of shade nets and UV treated polythene, respectively.
(4) use of light colour polythene and shade nets, respectively.
(5) construction of poly tunnel under a shade and use of exhaust fans, respectively.

26. Introduction of parasites, predators or pathogens of the pests into the environment to reduce the pest population constitute
(1) mechanical control. (2) biological control.
(3) autocidal control. (4) ecological control.
(5) agronomic control.

27. A farmer after applying a herbicide to his field, found that there are no details of the pre-harvest period on the label of the herbicide bottle. The best thing for him to do is **not to harvest** the crop until
(1) field is dry. (2) the next day morning.
(3) the three days after application. (4) the one week after application.
(5) the two weeks after application.

28. A poultry farmer observed a 25% drop in egg production in his layer flock during the month of December. The most possible reason for this observation could be
(1) short day length. (2) molting of hens.
(3) cold environment. (4) insufficient feed given to hens.
(5) cloudy environment.

29. Animal production in Sri Lanka can be badly affected by climate change. The animals that are more susceptible to climate change would be
(1) dairy cows in the hill country.
(2) ornamental fisheries in Kotmale area.
(3) local cattle in the Eastern province.
(4) broiler flocks reared in closed houses in Matale District.
(5) layer flocks reared in conventional deep litter houses in Anuradhapura District.

[*See page four*

30. Local cattle have a very low productivity. The best way to upgrade local cattle is
(1) to do mass selection.
(2) to do artificial insemination.
(3) to do cross breeding with European breeds.
(4) to do selection first and then line breeding.
(5) to do cross breeding first with Indian breeds and then with European breeds.

31. If the administrative districts in Sri Lanka are ranked according to their poultry population, the first three districts having higher poultry populations would be
(1) Colombo, Kurunegala and Puttalam. (2) Colombo, Kurunegala and Gampaha.
(3) Kurunegala, Gampaha and Puttalam. (4) Kurunegala, Kegalle and Anuradhapura.
(5) Kurunegala, Gampaha and Anuradhapura.

32. Following are some statements on animal feeds.
A - Fresh grass is a roughage feed which contains more than 18% crude fibre and 4 – 6% crude protein.
B - The crude fibre content of any concentrate feed should be less than 18%.
C - A protein supplement should always contain minimum 20% crude protein and small amount of crude fibre.
Of the above, the correct statement/s would be
(1) *A* only. (2) *B* only. (3) *C* only.
(4) *A* and *C* only. (5) *B* and *C* only.

33. The optimum temperature that should be maintained in the setter compartment of an egg incubator is
(1) 36.7 °C (98 °F). (2) 37.2 °C (99 °F). (3) 37.8 °C (100 °F).
(4) 38.3 °C (101 °F). (5) 38.9 °C (102 °F).

34. The newly borne calves should be fed with colostrum during first three days after birth. This is important because
(1) they do not eat grass.
(2) they are hungry soon after birth.
(3) normal milk is not much palatable to them.
(4) colostrum contains more nutrients than normal milk.
(5) colostrum contains nutrients that can be absorbed without digestion.

35. Artificial insemination of cattle is **not** much successful among ordinary dairy farmers in Sri Lanka because
(1) artificial insemination is very expensive.
(2) artificial insemination results more male births.
(3) farmers cannot correctly detect the heat of animals.
(4) farmers do not believe that it is a satisfactory technique.
(5) in most of the cases, artificial insemination is not done at correct time.

36. After proper stimulation, a dairy farmer took 10 minutes to complete milking of his cow. However, he did not get the expected amount of milk from the cow. The main reason for low milk yield could be
(1) the cow was under stress.
(2) the farmer was too slow in milking.
(3) the farmer had finished milking too early.
(4) the cow had not been fed enough on the previous day.
(5) the cow had not been given sufficient water for drinking.

37. The most significant reasons for the post harvest losses of fruits that are sold at road sides on open shelve is
(1) over stacking and physical damages.
(2) exposing to sunlight and high temperature.
(3) contaminating with dust and vehicle smoke.
(4) stacking of different types of fruits together.
(5) contaminating with microorganisms and poor sanitary conditions.

38. The two direct reasons for food spoilage are
(1) microbial actions and physical damages.
(2) pest attacks and poor post harvest handling.
(3) chemical reactions and poor storage conditions.
(4) microbial actions and enzyme activity of the food.
(5) harvesting before the maturity and poor storage conditions.

[*See page five*

39. Following are some statements regarding dietary fiber.

A - Dietary fiber is categorized as soluble and insoluble fiber.
B - Dietary fiber encourages the growth of microorganisms in the colon.
C - Dietary fiber helps to retain water during digestion.
D - Absorption of nutrients at the digestive system is facilitated by dietary fiber.

Of the above, the correct statements 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*.

40. A poultry farmer recently purchased a hatchery unit for his farm. The correct statement with respect to his cost would be

(1) average cost will decrease.
(2) average fixed cost will increase.
(3) average variable cost will increase.
(4) total variable cost will decrease.
(5) marginal cost will increase.

41. If a 10% increase in price of 200 g butter pack leads to a 14% decrease in the quantity demanded, then the price elasticity of demand for butter is

(1) price elastic. (2) price inelastic.
(3) unitary elastic. (4) perfectly price elastic.
(5) perfectly price inelastic.

42. Following are some statements related to the grading and standardization of agricultural produce.

A - Grading and standardization leads to shifting of the demand curve to the left.
B - Grading and standardization leads to an increase in the average price of that produce.
C - With the grading and standardization, the demands for high quality produce tend to be price elastic.

Of the above, the correct statement/s would be

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

43. A farmer faces with the following problems.

A - The bean crop is affected by an unknown disease.
B - The anicut, providing irrigation water to crop field is damaged.
C - Lack of sufficient knowledge to inter-crop pepper with tea.

To find solutions to above problems, the government departments/agencies he should contact would be

(1) Department of Agriculture, Department of Agrarian Development and Department of Export Agriculture, respectively.
(2) Department of Agriculture, Irrigation Department and Department of Export Agriculture, respectively.
(3) Department of Agriculture, Department of Agrarian Development and Tea Small Holding Development Authority, respectively.
(4) Department of Agrarian Development, Irrigation Department and Department of Export Agriculture, respectively.
(5) Department of Agrarian Development, Irrigation Department and Department of Agriculture, respectively.

44. Following are two statements regarding clay and silt particles of the soil.

A - In general, higher the percentage of silt and clay particles in a soil, higher the water holding capacity.
B - The clay and silt particles have a much larger surface area than the sand particles.

Of the above statements,

(1) *A* is correct but *B* is incorrect.
(2) *A* is incorrect but *B* is correct.
(3) Both *A* and *B* are correct and *B* further explains *A*.
(4) Both *A* and *B* are correct and *A* further explains *B*.
(5) Both *A* and *B* are correct but have no relationship to each other.

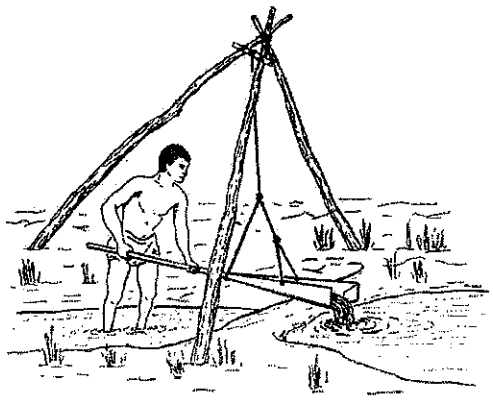
[*See page six*

45. Fertilizer use efficiency of inorganic fertilizer can be increased through,
(1) split application or application with organic manure or incorporated into the soil.
(2) application with organic manure or incorporated into the soil or application only at the time of crop maturity.
(3) incorporated into the soil or application as coated granule fertilizer or application only at the time of crop maturity.
(4) application as coated granule fertilizer or application only at the time of crop maturity or surface application.
(5) surface application or application with organic manure or application as coated granule fertilizer.

46. Following are some statements regarding plant nutrition.
A - There are 9 essential nutrients and 6 non-essential nutrients important for plant nutrition.
B - Essential nutrients are directly involved in plant nutrition and the life cycle of the plant cannot be completed without them.
C - Micro-nutrients are important in plant nutrition but they are not essential.
Of the above, correct statement/s would be
(1) *A* only. (2) *B* only. (3) *C* only. (4) *A* and *B* only. (5) *A* and *C* only.

● Use the given diagram to answer question No. **47**.

47. The water lifting device shown in the diagram is named as
(1) Noria.
(2) Swing basket.
(3) Persian wheel.
(4) Counterpoise lift.
(5) Suspended scoop.



48. Following are few statements on post-harvest techniques of fruits.
A - Fruits should be harvested at correct maturity.
B - Suitable fungicide should be applied after harvesting.
C - Fruits should be exposed to sunlight for one day after harvesting to reduce excess moisture.
Of the above, the correct statement/s would be
(1) *A* only. (2) *B* only. (3) *C* only.
(4) *A* and *B* only. (5) *B* and *C* only.

49. Following are some plants found in a home garden.
A - Leafy vegetables *B* - Sri Lanka almond (Kottamba)
C - Breadfruit *D* - Yam
E - Anthurium *F* - Manioc
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.

50. Following are some statements related to price controls.
A - Effective price floors for agricultural produce are accompanied with surpluses.
B - Effective price ceilings for food commodities lead to shortages in the market.
C - In general price controls (ceilings or floors) lead to increase the volume of transaction compared to the situation without control.
Of the above, the correct statement/s would be
(1) *A* only. (2) *B* only. (3) *C* only.
(4) *A* and *B* only. (5) *B* and *C* only.

* * *

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கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2017 ஓகஸ்ற்
General Certificate of Education (Adv. Level) Examination, August 2017

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	
Total		
Percentage		

Final Marks

In Numbers	
In Letters	

Code Numbers

Marking Examiner 1	
Marking Examiner 2	
Marks checked by	
Supervised by	

[see page two

Part A - Structured Essay

Answer all questions on this paper itself.

(Each question carries **10** *marks.)*

Do not write in this column

1. (A) Agro-climatic and agro-ecological zones are considered in crop recommendations for cultivation.

(i) State **two** major factors considered in classification of agro-ecological zones in Sri Lanka.

(1) .....

(2) .....

(ii) Name a plantation crop grown in each of the following major agro-climatic zones.

Agro-climatic zone	**Plantation Crop**
(1) Wet zone	.....
(2) Dry zone	.....

(B) Chemical properties of a soil have a direct effect on crop growth.

(i) List **three** major soil chemical properties affecting crop growth.

(1) .....

(2) .....

(3) .....

(ii) What is the main importance of Cation Exchange Capacity (CEC) of a soil?

.....

.....

(C) Application of soil conservation methods is important to maintain the soil fertility. List **three** physical soil conservation methods.

(i) .....

(ii) .....

(iii) .....

(D) Legume plants can fix atmospheric nitrogen through symbiosis with bacteria species.

(i) Name a bacteria species responsible for nitrogen fixation in legume plants.

.....

(ii) List **two** main plant nutrients required for nitrogen fixation in legume plants.

(1) .....

(2) .....

(E) Application of organic manure to the soil has many advantages. List **three** main advantages of applying organic manure to the soil.

(i) .....

(ii) .....

(iii) .....

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

Statement	**(T/F)**
(i) Main fertilizer available in Sri Lankan market for hydroponic crop culture is Albert's solution.	(.....)
(ii) Causal agent of leaf curl disease of chilli is *Rizoctonia solani*.	(.....)
(iii) Moisture content of certified seed paddy should be less than 5%.	(.....)
(iv) Tetrazolium test is used to test seed viability.	(.....)

[see page three

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(G) Crop livestock integration is a common farming system practiced in Sri Lanka.

(i) State **two** main advantages of crop livestock integration.

(1) .....

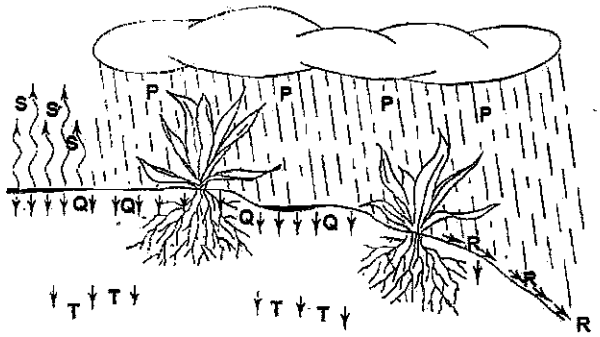
(2) .....

(ii) State **two** common crop livestock systems found in Sri Lanka.

(1) .....

(2) .....

2. (A) The following diagram shows what happen to the rainwater received to a crop field. Use this diagram to answer questions (i) and (ii).



(i) Name the processes labelled as **P**, **Q**, **R**, **S** and **T** in the diagram.

	Process	Name
(1)	**P**	.....
(2)	**Q**	.....
(3)	**R**	.....
(4)	**S**	.....
(5)	**T**	.....

(ii) Write an equation to calculate effective rainfall, using the above symbols.

.....

(B) Surface irrigation systems can be classified as controlled and uncontrolled irrigation systems.

(i) List **four** controlled surface irrigation systems.

(1) .....

(2) .....

(3) .....

(4) .....

(ii) State **two** main advantages of using controlled surface irrigation compared to uncontrolled surface irrigation.

(1) .....

(2) .....

[see page four

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(C) Vegetative propagation has become a popular propagation technique in horticulture and floriculture.

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

(1) .....

(2) .....

(ii) State **two** main disadvantages of vegetative propagation.

(1) .....

(2) .....

(iii) Name a crop propagated by each of the following natural vegetative structures.

Natural vegetative structure	**Crop**
(1) Rhizome	.....
(2) Runners	.....
(3) Suckers	.....

(iv) List **two** artificial vegetative propagation techniques commonly used in horticulture and floriculture.

(1) .....

(2) .....

(D) Inter-cropping is the cultivation of two or more crops simultaneously on the same field.

(i) State **two** factors to be considered in selecting component crops for inter-cropping.

(1) .....

(2) .....

(ii) Name **two** different crop combinations that could be intercropped.

	Main crop	**Intercrop**
(1)	.....	.....
(2)	.....	.....

3. (A) Export agricultural sector plays an important role in Sri Lankan economy.

(i) List **three** major non-plantation export crops grown in Sri Lanka.

(1) .....

(2) .....

(3) .....

(ii) List **two** major problems specific to non-plantation export agricultural crop sector in Sri Lanka.

(1) .....

(2) .....

(B) In plant breeding, creation of a genetic variation is important to select the best genotypes. State **two** methods to create genetic variation.

(i) .....

(ii) .....

[see page five

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(C) Forage resources are preserved as hay and silage to be used during dry seasons.

(i) State the main difference between hay and silage.

.....

(ii) Name the main chemical compound produced in silage which helps to preserve forage.

.....

(D) In a livestock farm many activities are carried out. Write the main reason/purpose for each of the following activities in a farm.

Activity	Main reason/purpose
(i) Turning of eggs during incubation	.....
(ii) Adding glucose and vitamin B to drinking water given to chicks during the first day of brooding	....
(iii) Adding sand or gravel to layer diet	.....
(iv) Dipping of teats in a potassium permanganate ($KMnO_4$) solution at the end of milking a cow	....

(E) Viruses cause diseases in farm animals that are economically devastating. List **two** viral diseases of each cattle and poultry.

(i) Cattle

(1) .....

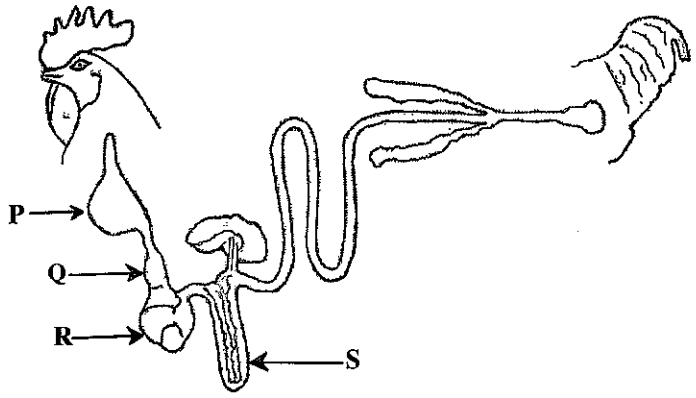
(2) .....

(ii) Poultry

(1) .....

(2) .....

(F) The following diagram shows the digestive tract of a chicken. Use this diagram to answer questions (i) to (iv).



Name the parts of the digestive tract of a cattle that are functionally similar to each **P**, **Q**, **R** and **S** parts of the above diagram.

Functionally similar parts of the digestive tract of a cattle

(i) **P** .....

(ii) **Q** .....

(iii) **R** .....

(iv) **S** .....

[see page six

(G) List the **four** main steps (in correct order) to be followed in milking a cow to obtain high yield of quality milk.

(i) .....

(ii) .....

(iii) .....

(iv) .....

Do not write in this column

4. (A) In pest management, it is important to control the pest while minimizing the damage to the beneficial animals.

(i) What is the first step to be followed in planning a successful pest control program?

.....

(ii) Name the breakeven point at which the cost of pest control equals the revenue loss caused by a pest.

.....

(iii) What is the main environmental factor that the farmer should consider before spraying pesticides to his field?

.....

(iv) State the function of surfactants in pesticide application.

.....

(v) What is the pre-harvest interval?

.....

(B) Weeds contribute to a significant yield loss in agricultural fields.

(i) State the main difference between annual weeds and biannual weeds?

.....

(ii) What type of herbicide is best for controlling perennial weeds?

.....

(iii) State **two** advantages of weeds.

(1) .....

(2) .....

(C) State **two** major reasons as to how postharvest losses reduce when fruits are harvested at correct maturity stage.

(i) .....

(ii) .....

(D) State how spoilage microorganisms in foods get affected by following preservation treatments.

(i) Pasteurization .....

(ii) Sterilization .....

(iii) Refrigeration .....

(iv) Freezing .....

[see page seven

(E) State **three** benefits of a good market information system to the farmers.

(i) .....

(ii) .....

(iii) .....

(F) State **three** external factors that influence small scale agribusinesses.

(i) .....

(ii) .....

(iii) .....

(G) Maintenance of farm records is important. List **two** each financial and physical records that should be maintained in a farm.

(i) Financial records

(1) .....

(2) .....

(ii) Physical records

(1) .....

(2) .....

Do not write in this column

* *

[see page eight

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கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2017 ஓகஸ்ற்
General Certificate of Education (Adv. Level) Examination, August 2017

කෘෂි විද්‍යාව	II
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) Explain how physical properties of soil affect on crop cultivation.

(ii) State malnutrition problems found in Sri Lanka and explain how can they be detected and overcome.

(iii) Describe the importance of practicing Integrated Plant Nutrient Management (IPNM) in crop production.

6. (i) Explain the importance of applying correct pre-treatments to the harvested crop, to minimize its post-harvest losses.

(ii) Describe the importance of using 'Controlled Agriculture' as an alternative crop production method to overcome the impact of climate change.

(iii) Describe the importance of land preparation in crop cultivation.

7. (i) Explain the importance of Auxin on crop growth.

(ii) Explain how a flock of laying hens should be reared from point of lay until the end of egg production.

(iii) Describe the soil conservation methods used in sloppy lands.

8. (i) Explain the techniques used to increase the water use efficiency in crop cultivation.

(ii) Describe the method of micro-propagation of plants and its advantages.

(iii) Describe how the main components of the feed get digested and absorbed in a digestive tract of a poultry bird.

9. (i) Explain different drainage methods used in agricultural lands.

(ii) Describe the factors to be considered in designing a suitable house for dairy cattle.

(iii) Describe different agricultural markets operate in Sri Lanka for annual crops.

10. (i) Describe the methods used to control transpiration losses of crops.

(ii) Describe the main agriculture and land related acts and ordinances introduced in post-independent Sri Lanka.

(iii) Describe the propagation structures used in water conservation.

* * *