

AL/2019/18/E-I (NEW/OLD)

සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமைபுடையது / All Rights Reserved

නව/පැරණි නිර්දේශය - புதிய/பழைய பாடத்திட்டம் - New/Old Syllabus

NEW/OLD

Department of Examinations, Sri Lanka

අධ්‍යයන පොදු සහතික පත්‍ර (උසස් පෙළ) විභාගය, 2019 අගෝස්තු  
 கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2019 ஓகஸ்ட்  
 General Certificate of Education (Adv. Level) Examination, August 2019

කෘෂි තාක්ෂණවේදය I  
 விவசாயத் தொழினுட்பவியல் I  
 Agro Technology I

18 E I

15.08.2019 / 1300 - 1500

පැය දෙකයි  
 இரண்டு மணித்தியாலம்  
 Two hours

## Instructions:

- \* Answer all 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. Select the statement that best describes soft technology.
  - (1) Extensive capital is required to create soft technology.
  - (2) Computers are necessary to implement soft technology.
  - (3) Human creativity is involved in design and use of soft technology.
  - (4) Soft technology heavily depends on mechanization.
  - (5) Telecommunication industry is mostly benefited from soft technology.
2. Select the process where internet is an essential requirement.
  - (1) Making a presentation on business.
  - (2) Database management.
  - (3) Writing a business letter to the employees.
  - (4) Sending an information to employees.
  - (5) E-commerce.
3. The micronutrient responsible for the anemic condition is
  - (1) iodine.                      (2) iron.                      (3) zinc.                      (4) magnesium.                      (5) potassium.
4. The direct impact of over-nutrition is
  - (1) obesity.                      (2) diabetes.                      (3) hypertension.                      (4) heart disease.                      (5) leukemia.
5. Foods containing agrochemical residues may be unfit for human consumption. Out of the following elements which one is an example for such contaminants?
  - (1) Cd                      (2) Mg                      (3) Na                      (4) Fe                      (5) K
6. The cutting surface of the fresh-cut brinjals become brown in colour within a short period of time. The enzyme responsible for this colour changes is
  - (1) catalase.                      (2) polyphenol oxidase.                      (3) peroxidase.
  - (4) linamarase.                      (5) chlorophyllase.
7. Studies have confirmed that the oil of Mee seeds (*Madhuca longifolia*) can be used in cooking. Select the statement that best explains the popularization of Mee seed oil among people.
  - (1) An introduction of a healthy oil source to the market.
  - (2) A new step to assure the food security.
  - (3) Removal of other plant-based oils from the market.
  - (4) An introduction of a substitute for animal fat.
  - (5) An introduction of a substitute for palm oil.

[see page two]

8. The most critical factor that determines tuber yield in potato is  
 (1) rainfall. (2) temperature. (3) relative humidity.  
 (4) change in the day length. (5) temperature difference between day and night.
9. Select the correct statement.  
 (1) Sri Lanka is divided into 24 agro-ecological regions.  
 (2) Sri Lanka is divided into three main agro-climate zones based on rainfall.  
 (3) Areas in Sri Lanka with an average annual rainfall above 1750 mm is known as wet zone.  
 (4) Relative humidity and wind speed are considered in the classification of agro-ecological regions in Sri Lanka.  
 (5) Soil type, land use and topography are the main factors that are considered in classifying agro-ecological regions in Sri Lanka.
10. Consider the following statements.  
 'Seed viability' indicates the ability of seeds  
 A - to develop into plants.  
 B - that can be stored for a longer period.  
 C - to survive under unfavourable environmental conditions.  
 Of the above, the correct statement/s is/are  
 (1) A only. (2) B only. (3) C only.  
 (4) A and C only. (5) B and C only.
11. From the following, select the statement that best describes a 'corm'.  
 (1) An underground stem, contains nodes and internodes, covered with scale leaves.  
 (2) An underground storage organ, contains a swollen stem base, covered with scale leaves.  
 (3) An aboveground stem, contains nodes and internodes, covered with scale leaves.  
 (4) An aboveground storage organ, contains a swollen stem base, covered with scale leaves.  
 (5) A vegetative propagation structure, with swollen leaf base, covered with scale leaves.
12. Select the main difference between budding and grafting.
- |     | Budding  | Grafting  |
|-----|--|---|
| (1) | A technique used in field crops.                           | A technique used in horticultural crops.                        |
| (2) | Scion and the root stock are selected from the same plant. | Scion and stock are selected from different but related plants. |
| (3) | Practiced during the growing seasons of stock.             | Practiced during the dormant seasons of stock.                  |
| (4) | Produces a weaker plant that cannot tolerate drought.      | Produces a healthy plant that tolerate drought.                 |
| (5) | A budded plant shows early flowering with low yields.      | A grafted plant shows late flowering with higher yields.        |
13. The most suitable vegetative propagation structure of Aratta (*Alpinia calcarata*) is the  
 (1) seed. (2) tuber. (3) cutting. (4) leaf. (5) rhizome.
14. The medicinal plant that is best suited to train into a 'growth arch' is  
 (1) Hathawariya (*Asparagus racemosus*). (2) Pawatta (*Adhatoda vasica*).  
 (3) Bin Kohomba (*Munronia pinnata*). (4) Komarika (*Aloe vera*).  
 (5) Heen Bovitiya (*Osbeckia octranda*).
15. The medicinal plant which is widely used for herbal drinks is  
 (1) Aratta (*Alpinia calcarata*). (2) Pepper (*Piper nigrum*).  
 (3) Iramusu (*Hemidesmus indicus*). (4) Kohomba (*Azadirachta indica*).  
 (5) Niyangala (*Gloriosa superba*).
16. In Sri Lanka, sea grasses are mainly found in the  
 (1) Eastern coast. (2) Southern coast. (3) Jaffna peninsula.  
 (4) North-eastern coast. (5) North-western coast.

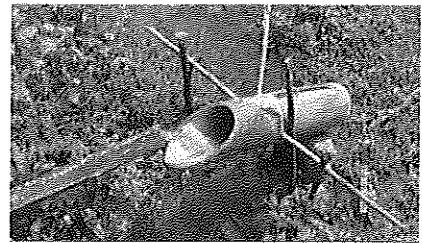
17. The most suitable method for long term storage of fruits and vegetables is
- (1) silo.
  - (2) cold storage.
  - (3) warehouse with good ventilation.
  - (4) racks in dark environment.
  - (5) deep freezer.
18. Drying preserves agricultural products as it
- (1) kills all pathogens.
  - (2) alters the ingredients to make the material hard.
  - (3) reduces the availability of water for degradation.
  - (4) removes natural volatile compounds to a certain extent.
  - (5) increases the air spaces after drying.
19. Select the correct statement.
- (1) Production of tissue culture plants is a simple and modern biotechnological application used in commercial scale.
  - (2) Recombinant DNA technology is used to produce identical new plants.
  - (3) Both nucleic acids and genes are found only in cells of reproductive tissues.
  - (4) Production of new plant varieties by crossbreeding and selection are traditional practices.
  - (5) Production of new plant varieties by selection is a traditional practice but crossbreeding is a modern technology.
20. An example for a service-oriented, bio-resource technological entrepreneurship is
- (1) production and selling of medicinal plants.
  - (2) conducting training courses on the control of Fall Army Worm.
  - (3) wedding catering service.
  - (4) conducting training courses on forest conservation.
  - (5) production of forest tree plants.
21. Several factors that should be considered in selecting a business opportunity are
- (1) demand for the supply and availability of natural resources.
  - (2) technology that will be used and capital investment.
  - (3) labour availability and attitude of the people.
  - (4) availability of electricity, water and other inputs.
  - (5) infrastructure facilities and market.
22. Consider the following statements.
- A - A manager of a successful enterprise should have leadership qualities.  
 B - Coordination, dedication and responsibility are leadership qualities of a manager.  
 C - The success of an enterprise mainly depends on capital investment.
- Of the above, the correct statement/s is/are
- (1) A only.
  - (2) B only.
  - (3) C only.
  - (4) A and B only.
  - (5) A and C only.
23. Cash flow statement of a business should include
- (1) rate of production and financial losses.
  - (2) profits or losses.
  - (3) total revenue and net profit.
  - (4) income and cash balance.
  - (5) total expenditure and net profit.
24. An indirect effect of fossil fuel-powered machinery used in agriculture is
- (1) emission of particulate matter to air.
  - (2) noise pollution.
  - (3) disturbances to soil fauna.
  - (4) global warming.
  - (5) addition of harmful chemicals to soil and water.

25. A student who used a mixture of saw dust and rice straw for making compost observed poor decomposition after one month. The best action could have been taken by this student to have an optimum decomposition of the initial mixture is

- (1) turn the mixture regularly. (2) add wood ash to the mixture.  
 (3) add cow dung to the mixture. (4) add rock phosphate to the mixture.  
 (5) maintain a damp condition in the mixture.

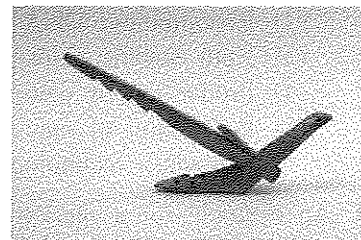
26. Use of this instrument in paddy fields can be identified as a

- (1) method of controlling water.  
 (2) method of irrigation.  
 (3) weed control method.  
 (4) pest control technique.  
 (5) measure to increase the yield.



27. This diagram illustrates

- (1) a tool used for land levelling.  
 (2) the Japanese convertible plough.  
 (3) an implement for inter-cultivation.  
 (4) a secondary land preparation implement.  
 (5) a village wooden plough.



28. Select the tractor mounted secondary land preparation implement used to break soil clods.

- (1) Mouldboard plough (2) Sub-soiler (3) Disc harrow  
 (4) Hoe (5) Fork

29. What is the unit of measurement of soil bulk density?

- (1) ppm (2) meq/cm (3) g/mL (4) g/cm<sup>2</sup> (5) kg/ha

30. Water logging in agricultural fields can be caused by the extensive use of

- (1) pesticides. (2) sub-soiler. (3) fertilizer.  
 (4) two-wheel tractors. (5) heavy machinery.

31. Wind can cause soil degradation due to

- (1) damage of plants. (2) erosion of the top soil.  
 (3) high evaporation of water. (4) removal of organic matter.  
 (5) deposition of dust.

32. Flood irrigation is suitable for

- (1) areas with sandy soils. (2) slopy lands. (3) coconut plantation.  
 (4) paddy cultivation. (5) orchards.

33. Select the correct statement regarding pumping water using a centrifugal pump.

- (1) Water flows intermittently.  
 (2) Flow rate decreases with increasing the delivery height.  
 (3) Pump should be primed several times during the operation.  
 (4) Pump should be stopped for cooling.  
 (5) Not good for pumping water with suspended particles.

34. Water quality for irrigation is best indicated by the

- (1) colour of water. (2) suspended particles in water.  
 (3) water temperature. (4) salt content in water.  
 (5) smell of water.

35. Select the group of mineral elements that are considered as essential plant nutrients.

- (1) N, P, Ca, C and Cu (2) N, K, Mg, H and Zn  
 (3) P, S, Mo, O and Mn (4) K, S, Mg, Ca and Mo  
 (5) Ca, Mg, Zn, C and Fe

36. Compost is best described as
- (1) decomposed organic matter.
  - (2) one of the best source of plant nutrients.
  - (3) a material consisting of municipal solid waste.
  - (4) a material made out of plant and animal debris.
  - (5) a material added to soil to help increasing crop yield.
37. Consider the following statements.
- A - C4 plants have lower yield potential than C3 plants.  
 B - C3 plants have lower CO<sub>2</sub> fixation rates than C4 plants.  
 C - CAM plants minimize photorespiration.
- Of the above, the correct statement/s is/are
- (1) A only.
  - (2) B only.
  - (3) C only
  - (4) A and B only.
  - (5) B and C only.
38. Select the correct statement with respect to plant tissue culture.
- (1) Explant is the tissues obtained from leaves of a plant.
  - (2) Plant tissue culture is part of the process of genetic engineering.
  - (3) A callus is produced when the explant fails to establish in a growth medium.
  - (4) In a protoplast culture, plants require ammonium for growth.
  - (5) High auxin:kinetin ratio is required for cell division.
39. What is scientific name of the Fall Armyworm, recently reported in Maize cultivation in Sri Lanka?
- (1) *Spodoptera litura*
  - (2) *Spodoptera frugiperda*
  - (3) *Spodoptera exigua*
  - (4) *Spodoptera eridania*
  - (5) *Spodoptera littoralis*
40. Consider the following statements.
- A - Use of knapsack sprayer is the best method to spray pesticides in crop fields.  
 B - Development of resistance in pests is one of the major negative effects of continuous use of the same pesticide.  
 C - Water can be considered as a herbicide as it is used to control weeds in paddy fields of Sri Lanka.
- Of the above, the correct statement/s is/are
- (1) A only.
  - (2) B only.
  - (3) C only
  - (4) A and B only.
  - (5) B and C only.
41. The economic threshold level in pest management can be defined as the
- (1) pest population at which the control measures should be applied.
  - (2) pest population density at which the control measures should be applied.
  - (3) pest population at which the crop losses will be significant.
  - (4) pest population density at which the crop losses will be significant.
  - (5) pest population density at which the farmer decides to apply control measures.
42. A contact type herbicide
- (1) kills the plants by touching the leaf surface.
  - (2) is taken up by roots and acts in leaves of plants.
  - (3) shows acute toxicity in plants.
  - (4) kills underground vegetative organs of plants.
  - (5) is the best option available to control weeds such as *Cyperus rotundus*.
43. Select the correct statement regarding the use of protected culture techniques in Sri Lanka.
- (1) Not suitable as Sri Lanka is a tropical country.
  - (2) Low profit due to high inputs.
  - (3) Only found in up-country where the temperature is low.
  - (4) Suitable only for selected crops.
  - (5) Net houses cannot be categorized under protected culture.

44. The major group of floricultural product exported from Sri Lanka in 2018 was  
 (1) cut flowers. (2) cut foliage. (3) budded plants.  
 (4) pot plants. (5) aquarium plants.
45. Following statements compare the ruminant animals with non-ruminant animals.  
 A - Both ruminants and non-ruminants are four-legged animals.  
 B - Ruminants have a complex stomach but non-ruminants have a simple stomach.  
 C - Ruminants basically fed on roughage feeds but non-ruminants are fed on concentrate feeds.  
 D - Ruminants and non-ruminants require completely different nutrients.  
 Of the above, the correct statements are  
 (1) A and B only. (2) B and C only. (3) C and D only  
 (4) A, B and C only. (5) B, C and D only.
46. The main energy-supplying nutrient found in roughage feeds is  
 (1) starch. (2) cellulose. (3) protein. (4) lipids. (5) fatty acids.
47. Select the most correct statement regarding animal feed.  
 (1) Silage is a fermented moist product produced from forages.  
 (2) Silage is a fermented dry product produced from forages.  
 (3) Hay is produced from both pasture and fodder grasses.  
 (4) Adding legumes to forage increases the total carbohydrate percentage of the feed.  
 (5) Hay is more palatable to cattle than silage.
48. Candling is done during incubation of eggs to  
 (1) increase the fertility of eggs.  
 (2) increase the hatchability of eggs.  
 (3) decrease early embryonic mortality during incubation.  
 (4) remove infertile eggs and eggs with dead embryos from the incubator.  
 (5) check whether the embryos are growing properly.
49. The average length of the estrous cycle of a cow is  
 (1) 18 days. (2) 21 days. (3) 25 days. (4) 28 days. (5) 30 days.
50. Following are some statements regarding preservation of animal products.  
 A - Meat and milk need preservation to prevent microbial spoilage.  
 B - Meat and milk are easily spoiled due to enzymatic reactions.  
 C - Preservation could change certain quality characteristics of milk and meat.  
 Of the above, the correct statements are  
 (1) A only. (2) B only. (3) C only  
 (4) A and B only. (5) A and C only.

\* \* \*

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**NEW/OLD**  
 இலங்கைப் பரீட்சைத் திணைக்களம் / இலங்கைப் பரீட்சைத் திணைக்களம் / இலங்கைப் பரීட்சைத் திணைக்களம் / இலங்கைப் பரීட்சைத் திணைக்களம் / இலங்கைப் பரීட்சைத் திணைக்களம்  
 Sri Lanka Department of Examinations, Sri Lanka / Sri Lanka Department of Examinations, Sri Lanka / Sri Lanka Department of Examinations, Sri Lanka / Sri Lanka Department of Examinations, Sri Lanka / Sri Lanka Department of Examinations, Sri Lanka

අධ්‍යයන පොදු සහතික පත්‍ර (උසස් පෙළ) විභාගය, 2019 අගෝස්තු  
 கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2019 ஓகஸ்ட்  
 General Certificate of Education (Adv. Level) Examination, August 2019

කෘෂි තාක්ෂණවේදය II  
 விவசாயத் தொழினுட்பவியல் II  
**Agro Technology II**

**18 E II**

**17.08.2019 / 1300 - 1610**

පැය තුනයි  
 மூன்று மணித்தியாலம்  
**Three hours**

අමතර කියවීමේ කාලය - මිනිත්තු 10 යි  
 மேலதிக வாசிப்பு நேரம் - 10 நிமிடங்கள்  
**Additional Reading Time - 10 minutes**

Use **additional reading time** to go through the question paper, select the questions and decide on the questions that you give priority in answering.

Index No. : .....

**Instructions:**

- \* This question paper consists of **10** questions in **08** pages.
- \* This question paper comprises of Parts **A, B** and **C**.  
 The time allotted for all three parts is **three hours**.
- Part A - Structured Essay (2 - 7 pages)**
- \* Answer **all** questions on this paper itself.
- \* Write your answers in the space provided for each question. Please note that the space provided is sufficient for your answers and extensive answers are **not** expected.
- Part B and C - Essay : (page No. 8)**
- \* Select **two** questions from each of the Parts **B** and **C** and answer **four** questions only. Use the papers supplied for this purpose.
- \* At the end of the time allotted for this paper, tie the **three** parts together so that Part **A** is on the top of Parts **B** and **C** before handing over to the supervisor.
- \* You are permitted to remove only Parts **B** and **C** of the question paper from the Examination Hall.

**For Examiner's Use only**

Part	Question No.	Marks
<b>A</b>	<b>1</b>	
	<b>2</b>	
	<b>3</b>	
	<b>4</b>	
<b>B</b>	<b>5</b>	
	<b>6</b>	
	<b>7</b>	
<b>C</b>	<b>8</b>	
	<b>9</b>	
	<b>10</b>	
<b>Total</b>		

**Total**

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) (i) Name **two** intellectual qualities required to create soft technology.

(1) .....

(2) .....

(ii) Name a software each used in following applications in a business.

**Software**

(1) Database management .....

(2) Spread sheet .....

(3) Search engine .....

(B) State **two** indices that can be used to evaluate the nutritional status of a person.

(1) .....

(2) .....

(C) State the nutritional disorders responsible for the following disease conditions of a person.

	Disease condition	Nutritional disorder
(1)	Hypertension	.....
(2)	Goitre	.....

(D) Food borne diseases could occur due to microbial contamination of foods. State the major groups of micro-organisms responsible for the following disease conditions.

	Disease conditions	Major group of micro-organisms
(1)	Hepatitis	.....
(2)	Diarrhea	.....

(E) State **two** physical factors responsible for microbial contamination of food.

(1) .....

(2) .....

(F) State **two** productive steps that could be taken at the regional level to assure the national level food security.

(1) .....

(2) .....

(G) State **two** differences between a shade net house and a green house.

(1) .....

(2) .....



Do not write in this column

(H) State **four** methods that can be used to sterilize the raised bed nurseries.

- (1) .....
- (2) .....
- (3) .....
- (4) .....

(I) State one of the main preservation methods each that could extend the shelf-life of each of the following materials.

	Material	Main preservation method to extend shelf-life
(1)	Black pepper (spice)	.....
(2)	Paddy (grain)	.....
(3)	Fish	.....
(4)	Milk	.....

2. (A) State one technological intervention each that may lead to create following phenomena in an agricultural eco-system.

- (1) Eutrophication : .....
- (2) Genetic mutation : .....

(B) Write **two** importance of conservation of plant genetic resources.

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

(C) State **two** characteristics of a successful entrepreneur.

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

(D) A Broiler farmer invested Rs. 100 millions to construct a modern broiler house equipped with automated feeding and watering systems. He annually spends another Rs. 200 millions to purchase day-old chicks, feed and medicines. The cost for labor is Rs. 1 million per year and the annual revenue from sale of broilers is Rs. 211 millions.

- (i) State whether the above business is labor intensive or capital intensive.  
.....
- (ii) What is the variable cost of the above production?  
.....
- (iii) What is the gross profit of the above broiler production?  
.....

(E) State the **three** main components of a profit loss account of an agricultural business.

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

[see page four

Do not write in this column

(F) Name **three** laboratory methods used to determine the soil texture.

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

(G) (i) Name **three** plants, which are used when preparing a decoction mixture for cold and cough.

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

(ii) Mention **three** methods used to dry medicinal plants.

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

(H) (i) Some of the fishing gears have been declared as destructive fishing gears. Name **two** such destructive fishing gears.

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

(ii) Jam and cordial are two popular products manufactured from pineapple. Name **one** waste product that generates in the processing of pineapple and **two** possible methods to utilize this waste product.

Waste Product	Possible methods to utilize the waste product
.....	(1) .....
	(2) .....

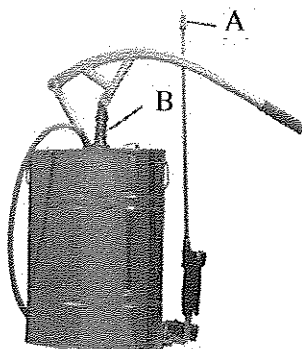


3. (A) State an appropriate alternative technology each for the following operations in agriculture.

Operation	Appropriate alternative technology
(i) Use of steel pipes for the structure of a poly tunnel	.....
(ii) Use of chemical weedicides	.....



(B) Following is a farm implement.



(i) Name the implement.

.....

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(ii) State the use of this implement in agriculture.

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

(iii) State the function of the following parts of the implement.

<b>Part</b>	<b>Function</b>
-------------	-----------------

- |     |          |       |
|-----|----------|-------|
| (1) | <b>A</b> | ..... |
| (2) | <b>B</b> | ..... |

(C) (i) State an example each for the following soil degradation factors in agriculture.

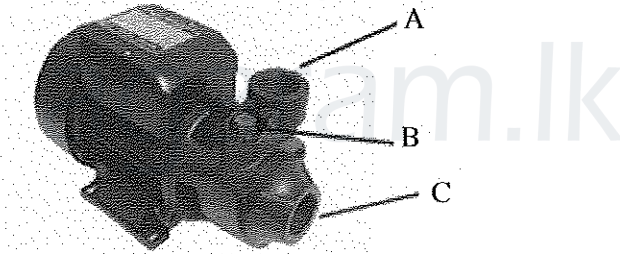
<b>Factor</b>	<b>Example</b>
---------------	----------------

- |     |            |       |
|-----|------------|-------|
| (1) | Physical   | ..... |
| (2) | Chemical   | ..... |
| (3) | Biological | ..... |

(ii) List **two** adverse effects of soil compaction in agriculture.

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

(D) The diagram given below is of an electrical centrifugal pump.



(i) State the function of each part of the pump shown above.

<b>Part</b>	<b>Function</b>
-------------	-----------------

- |     |          |       |
|-----|----------|-------|
| (1) | <b>A</b> | ..... |
| (2) | <b>B</b> | ..... |
| (3) | <b>C</b> | ..... |

(ii) Name a suitable method of irrigation each for the following crop cultivations.

<b>Crop cultivation</b>	<b>Irrigation method</b>
-------------------------	--------------------------

- |  |   |       |
|--|---|-------|
| (1) Bell pepper in a poly tunnel                   | : | ..... |
| (2) Large scale papaya cultivation in the dry zone | : | ..... |
| (3) Small scale Chili crop in raised beds          | : | ..... |

(E) The plant nutrients play important roles in different growth stages of plants. Following are some important growth stages of rice plant.

- P – Germination and seedling growth
- Q – Reproductive stage
- R – Maturity stage

Answer the following questions using the codes P, Q and R.

(i) What are the stages that Nitrogen should be applied for a significant contribution in determining plant yield?

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

(ii) In what stage does Potassium play an important role?

.....

(iii) In what stage is the total Phosphorous requirement of the crop supplied?

.....

(F) List **two** main differences between C3 and CAM photosynthetic pathways.

	C3 photosynthetic pathway	CAM photosynthetic pathway
(1)	.....	.....
(2)	.....	.....

(G) State an advantage of using tissue cultured plants in commercial agriculture.

.....

4. (A) Answer the following questions with respect to rice cultivation.

(i) Name the photosynthetic mechanism of rice.

.....

(ii) State **two** examples for C4 grass weeds found in lowland rice.

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

(iii) Name the main reproductive organ of an annual grass weed.

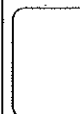
.....

(B) (i) Sketch and label the disease triangle.

(ii) List **two** major differences between an insect pest and a weed.

	Insect pest	Weed
(1)	.....	.....
(2)	.....	.....

Do not write in this column



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(C) Name **four** plants widely grown in net houses in Sri Lanka.

- (1) .....
- (2) .....
- (3) .....
- (4) .....

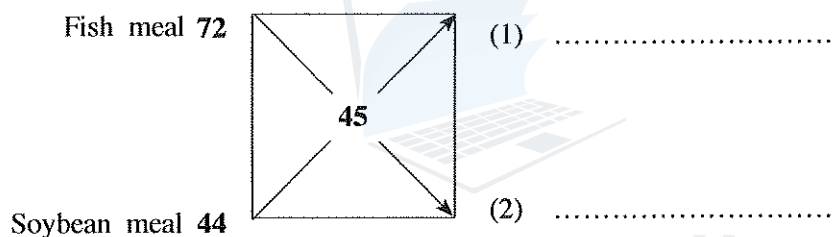
(D) Name **two** breeds of European dairy cattle.

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

(E) Name **two** substances used as additives in animal feeds.

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

(F) (i) Following diagram shows Pearson's Square used to find the mixing ratio of Fish meal and Soybean meal to produce a mixture containing 45% protein. Fill in the blanks (1) and (2) with correct values.



(ii) Grass can be conserved as silage and hay. State **two** advantages of making silage as compared to hay.

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

(G) (i) State **two disadvantages** of natural incubation of chicken eggs.

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

(ii) State **two** advantages of oestrous synchronization in cattle.

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

(H) Milk can be preserved by using low temperatures as well as high temperatures. Name **two** milk preservation methods done using high temperatures.

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

\* \*



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**NEW/OLD**

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව

இலங்கைப் பரீட்சைத் திணைக்களம்  
Sri Lanka Department of Examinations, Sri Lanka

අධ්‍යයන පොදු සහතික පත්‍ර (උසස් පෙළ) විභාගය, 2019 අගෝස්තු  
கல்விப் பொதுத் தராதரப் பத்திர (உயர் தர)ப் பரீட்சை, 2019 ஓகஸ்ட்  
General Certificate of Education (Adv. Level) Examination, August 2019

කෘෂි තාක්ෂණවේදය II  
விவசாயத் தொழினுட்பவியல் II  
Agro Technology II

18 E II

Essay

\* Select two questions from each of the Parts B and C and answer four questions only.  
(Each question carries 15 marks.)

### Part B

5. (i) Giving reasons, compare the nutritional requirement of infant and old stages of humans.  
(ii) Explain how to avoid groundwater pollution when using agrochemicals.  
(iii) Explain the factors that should be considered when establishing a commercial plant nursery.
6. (i) Briefly explain the impact of community-based activities on food security.  
(ii) Describe the main activities involved in managing a business successfully.  
(iii) Briefly describe the biological factors responsible for food spoilage.
7. (i) Describe advantages and disadvantages of application of genetic engineering techniques in agriculture.  
(ii) Describe the reasons of high post-harvest losses of fruits and vegetables compared to grains in Sri Lanka.  
(iii) Describe different applications of the 3R concept in agricultural waste management.

### Part C

8. (i) Describe the use of two-wheel tractor in different operations in agricultural sector in Sri Lanka.  
(ii) Write limitations of using poly tunnels in agricultural Sector in Sri Lanka.  
(iii) Compare the nutrient requirements of layer type chicken and broiler chicken.
9. (i) Describe the reasons for the popularity of centrifugal pumps in agriculture.  
(ii) Describe the importance of integrated pest management in agriculture.  
(iii) Describe the characteristics of eggs suitable for incubation.
10. (i) Describe main activities involved in preparing bull semen for artificial insemination from collecting of semen of a bull up to inseminating a cow.  
(ii) Describe various methods that can be used to preserve meat.  
(iii) Explain the methods used for reclamation and maintaining productivity in acidic soil for agriculture.

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