

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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கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2018 டிசெம்பர்  
General Certificate of Education (Ord. Level) Examination, December 2018

කෘෂි හා ආහාර තාක්ෂණය I, II  
விவசாயமும் உணவுத் தொழினுட்பவியலும் I, II  
Agriculture and Food Technology I, II

07.12.2018 / 0830 - 1140

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.

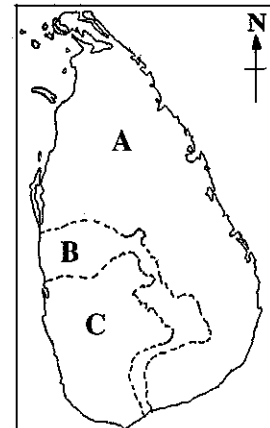
## Agriculture and Food Technology I

## Note :

- Answer *all* questions.
- In each of the questions 1 to 40, pick one of the alternatives (1), (2), (3), (4) which is *correct* or *most appropriate*.
- Mark a cross (X) on the number corresponding to your choice in the answer sheet provided.
- Further instructions are given on the back of the answer sheet. Follow them carefully.

- The well known saying "The farmer is good enough even to be the king when mud is washed off." was stated by  
 (1) the king Parakramabahu the great. (2) the writer Robert Knox.  
 (3) the governor Robert Brownrigg. (4) the king Mahasen.
- Out of the following, select the correct statements given on measuring weather parameters.  
 A - The quantity and the intensity of rainfall can be measured by a simple rain gauge.  
 B - Relative humidity of the atmosphere is measured as a percentage.  
 C - Intensity of light is measured in 'Lux'.  
 (1) A and B only. (2) A and C only.  
 (3) B and C only. (4) All A, B and C.
- Relative humidity of the atmosphere is one of the weather parameters that affect crop cultivation. With increased humidity,  
 (1) plant diseases are increased. (2) rooting of shoot cuttings is suppressed.  
 (3) storage life of seeds is increased. (4) insect pests damages are reduced.
- The given map depicts how Sri Lanka is divided into three zones according to the annual rainfall. Which row of the table indicates the correct annual rainfall in millimetres in zones A, B and C.

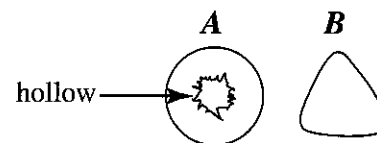
	A	B	C
(1)	Lesser than 1000	Between 1000-1500	More than 1500
(2)	Lesser than 300	Between 300-900	More than 900
(3)	Lesser than 900	Between 900-1800	More than 1800
(4)	Lesser than 1750	Between 1750-2500	More than 2500



5. The most suitable way to minimize transportation of soil particles in a sloped land by run off with high velocity is
- (1) adding organic matter to the soil.
  - (2) making contour stone bunds.
  - (3) mulching the soil.
  - (4) uprooting weeds.
6. Some chillies plants established in a pot were initially wilted and then dried off under a dry weather condition. In this stage, the soil of this pot would consist of
- (1) capillary water only.
  - (2) hygroscopic water only.
  - (3) gravitational and hygroscopic water only.
  - (4) capillary and hygroscopic water only.
7. Soil colloids play an important role in maintaining fertility of a soil. The colloids found in soils are
- (1) clay and humus.
  - (2) clay and silt.
  - (3) sand and silt.
  - (4) silt and humus.
8. Out of the following activities associated with soil organisms, which one would adversely affect on crop cultivation?
- (1) Decomposition of soil organic matter by fungi and bacteria
  - (2) Excretion of sticky materials to the soil by earth worms
  - (3) Fixation of Nitrogen in soil air by Rhizobium bacteria
  - (4) Removal of the plant nutrient Nitrogen from soil through de-nitrification
9. Out of the following, select the correct statements about crop classification based on plant families.
- A - Lufa, bitter gourd and snake gourd belong to the family Cucurbitaceae.  
B - Chillies, tomatoes and brinjals belong to the family Solanaceae.  
C - Cowpea, green gram and winged bean belong to the family Malvaceae.
- (1) A and B only.
  - (2) A and C only.
  - (3) B and C only.
  - (4) All A, B and C.
10. What is the **incorrect** statement regarding land preparation for crop cultivation.
- (1) Inter-cultivation is done before the crop establishment.
  - (2) By land preparation favourable soil condition for crop growth are provided.
  - (3) Weeds are controlled by proper land preparation.
  - (4) Water absorption ability in soil is improved by land preparation.
11. The type of nursery that could provide vegetable seedlings without root damages for planting in fields is
- (1) sand nurseries.
  - (2) neridoco nurseries.
  - (3) sunken bed nurseries.
  - (4) raised bed nurseries.
12. An activity which can be applied in order to harden nursery plants is
- (1) applying liquid fertilizer together with irrigation water to the nursery.
  - (2) applying fungicides to the nursery on the day before uprooting the plants.
  - (3) gradually increasing the number of exposing hours of nursery plants to sunlight.
  - (4) frequent irrigation of the nursery.
13. The plants which rapidly absorb water and remove more water through transpiration, could be planted to remove excess water from soil. A suitable plant for this purpose is
- (1) sugar cane.
  - (2) green gram.
  - (3) pandanus.
  - (4) pineapple.
14. An irrigation method that could be used to remove soil salinity is
- (1) flood irrigation.
  - (2) furrow irrigation.
  - (3) sprinkler irrigation.
  - (4) drip irrigation.

15. Select the correct statements, out of the given statements about chemical fertilizers.
- (1) Phosphorus is included in the top dressing mixture for paddy.
  - (2) The nitrogen fertilizer requirement for paddy is applied at basic land preparation.
  - (3) A mixture nitrogen, phosphorus and potassium are included in a complete chemical fertilizer mixture.
  - (4) Rock phosphate is suitable to supply phosphorus for annual crops.
16. Out of the following, select the correct statements regarding green manure.
- A - Legume plants are more suitable as green manure.  
 B - Moderately matured plant materials are more suitable as green manure.  
 C - Crotalaria planted in the field can be mixed with soil as a green manure.
- (1) A and B only.
  - (2) A and C only.
  - (3) B and C only.
  - (4) All A, B and C.
17. What is the activity that affects favourably on the decomposition of plant materials in the process of compost preparation?
- (1) Covering raw materials and keeping them under dry condition
  - (2) Keeping raw materials under anaerobic conditions
  - (3) Cutting raw materials into small pieces
  - (4) Increasing the interval of mixing raw materials
18. In order to get a better yield from crops, chemical fertilizer should be added,
- (1) during the heavy rainy seasons.
  - (2) when soil is extremely dry.
  - (3) when soil is moderately wet.
  - (4) when organic matter in the soil is less.
19. *A* and *B* diagrams depict the cross sectional view of the stems of two weeds. In which row of the following table, the correct examples for *A* and *B* are given?

	<i>A</i>	<i>B</i>
(1)	Kuppamenia	Monarakudumbiya
(2)	Batadella	Thunessa
(3)	Kalanduru	Mana
(4)	Japan jabara	Etawara



20. The pathogenic fungus that cause 'anthracnose' in vegetables and fruits is
- (1) Fusarium.
  - (2) Rhizoctonia.
  - (3) Pithium.
  - (4) Colletotricum.
21. A control measure that could be applied to control leaf mosaic disease in okra is
- (1) applying fungicides.
  - (2) applying seed treatments.
  - (3) controlling insect vectors.
  - (4) soil sterilization.
22. What is the correct statement on indigenous paddy varieties in Sri Lanka when compared to improved paddy varieties?
- (1) They are resistant to lodging.
  - (2) Their yield is very high.
  - (3) Health is maintained by consuming these rice.
  - (4) They respond well to chemical fertilizers.
23. Examples for crops that propagated by runners are,
- (1) potatoes and red onions.
  - (2) gotukola and strawberry.
  - (3) kankun and sweet potatoes.
  - (4) mukunuwenna and thampala.

24. A few statements about the cation exchange capacity (CEC) of a soil are given below.

A - The soils with high CEC are fertile.

B - CEC of soil is increased by adding organic matter.

C - When compared to clay soil, CEC is high in sandy soil.

Of the above, the correct statements are

(1) A and B only.

(2) A and C only.

(3) B and C only.

(4) all A, B and C.

25. A propagation method that could produce a large number of plants with the characters of its mother plant is

(1) planting stem cuttings.

(2) layering.

(3) budding.

(4) tissue culture.

26. An example for a temporary protected structure which is used in crop cultivation under controlled environment is

(1) poly-tunnels.

(2) net houses.

(3) solar propagators.

(4) glass houses.

27. Consider the following statements on crop cultivation under controlled environment.

A - The initial cost needed for cultivation in poly-tunnels is high.

B - The yields of crops which are grown under controlled environment are higher in quality.

C - Under the environmental conditions of the low country of Sri Lanka, increasing temperature in poly-tunnels is a problem.

Of the above the correct statements are

(1) A and B only.

(2) A and C only.

(3) B and C only.

(4) all A, B and C.

28. In crop cultivation, the controlled environmental conditions are provided only in certain stages of the life cycle of a crop. An example for such instance is

(1) shading vegetable seedling in first few days after transplanting in the field.

(2) irrigating the transplanted vegetable seedlings by a watering can.

(3) loosening the soil around the seedlings after adding chemical fertilizers.

(4) adding and mixing organic manure around seedlings.

29. The ecofriendly farming system which is conducted with minimum inputs and protecting soil, water, nutrients and biodiversity in a particular land is

(1) integrated farming.

(2) protected farming.

(3) chena cultivation.

(4) crop rotation.

30. Which of the following food that may cause disease conditions due to the accumulation of lead (Pb) in the body, through frequent consumption?

(1) The drinks added with preservatives

(2) Sprats cooked together with tomatoes

(3) Tuna fish stored for a few days (not fresh)

(4) Fried food wrapped in newspapers

31. The main food preservation method used in the production of jam is

(1) concentration.

(2) minimum processing.

(3) temperature control.

(4) fermentation.

32. When vegetables are cut into pieces to produce dried vegetables, blanching is done. The reason for this is to

(1) destroy micro organisms.

(2) facilitate drying.

(3) apply preservatives.

(4) inactivate enzymes.

33. The pathogen responsible for 'coccidiosis' disease in poultry is

(1) bacteria.

(2) protozoa.

(3) nematode.

(4) virus.

34. Drying of a pregnant cow should be started

- (1) 12 weeks before parturition. (2) 10 weeks before parturition.  
(3) 8 weeks before parturition. (4) 4 weeks before parturition.

35. A healthy cow shows heat signs once in

- (1) 14 - 17 days. (2) 18 - 21 days. (3) 24 - 27 days. (4) 28 - 30 days.

36. The cattle breed that obtain by cross-breeding of Sahiwal or Sindhi with Jersey is

- (1) Beef master. (2) Niliravi. (3) Surti. (4) Australian Milking Zibu.

37. The first activity that should be done soon after the birth of a calf is

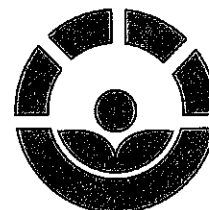
- (1) to let the calf to drink colostrum.  
(2) cutting the naval code and applying iodine.  
(3) wiping mucus on its nose and mouth.  
(4) to allow the calf to drink little amount of water.

38. In which row of the following table are the common characteristics of Indian and European breeds of cattle, correctly stated?

	Indian breeds	European breeds
(1)	The dewlap is well grown.	The skin is tightly attached to the body.
(2)	The back side of the body is round in shape.	The hump is well grown.
(3)	The body is comparatively small.	The skin is loose.
(4)	Milk production is comparatively high.	Fur is long.

39. If the given logo is printed on a food package in green colour, it indicates the food

- (1) subjected to gene mutations.  
(2) subjected to radiations.  
(3) with the international standards.  
(4) sterilized.



40. The following table shows some information about paddy seed samples A, B, C and D.

Sample	Germination percentage	Moisture percentage	Genetical purity
A	70	20	85
B	80	18	90
C	85	13	98
D	90	16	95

Of the above, which is the most suitable sample to use as seed paddy?

- (1) A (2) B (3) C (4) D

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 கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2018 டிசெம்பர்  
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කෘෂි හා ආහාර තාක්ෂණය I, II  
 விவசாயமும் உணவுத் தொழினுட்பவியலும் I, II  
 Agriculture and Food Technology I, II

### Agriculture and Food Technology II

\* Answer five questions only, selecting the first question and four others.

- In order to obtain a balanced and toxin-free diet, it is important to grow different crops in own home garden.
  - When establishing crops in a home garden, mention
    - two** vegetable crops that need to be produced seedling through nursery beds.
    - two** vegetable crops that plant seeds directly in the field.
  - Mention suitable crops belong to the following to be cultivated in a home garden.
    - Two** crops belong to family Poaceae
    - Two** vegetable crops belong to family Fabaceae
  - Write **two** activities that belong to secondary land preparation.
  - Mention **two** fruit crops widely grown in Sri Lanka, that give year round production.
  - Write **two** practices which are considered as inter-cultivation activities in crop cultivation.
  - Name **two** vine crops that could be trained over a barbed wire fence.
    - Propose **two** leafy vegetable crops that are suitable to plant in a place with poor drainage in a home garden.
  - Mention **two** insect repellent plants which are suitable to grow in order to control insect pests in a home garden.
  - The inter-veinal parts of some leaves in a brinjal cultivation were eaten and the remaining parts were seen as a net.
    - Name the pest that might cause the above damage?
    - In which stages of life cycle of the pest is this damage done?
  - Mention **two** patterns of drains that could be used to improve drainage in a soil.
  - Write **two** methods of determining soil pH.
- The environment in which a crop is grown, is important for its production and in this case climate and soil play a main role.
  - Mention **two** climatic parameters that affect each of the following incidents.
    - Increasing of plant diseases
    - Pollination of flowers
    - Transpiration
  - Write **three** importance of soil air in crop cultivation.
    - Write **two** actions that could be taken to improve soil aeration.
  - Mention **two** ways how the knowledge on the texture of a soil become important in crop cultivation.

3. (i) (a) What is meant by seed dormancy?  
(b) Although seed dormancy is a problem in crop cultivation, some times it is a useful character. Give an example for such useful instance.  
(c) Write **two** disadvantages of plant propagation by seeds.
- (ii) Write separately the natural vegetative propagules which are used in propagation of red onion, potato, turmeric and colocasia.
- (iii) Write **two** advantages of tissue culture.
4. It is very important to minimize pest damages to obtain a successful crop production. In order to that, attention should be paid to minimize pest damages during all activities from land preparation to harvesting.
- (i) Write **four** non-chemical methods that can be used to control weeds in crop cultivation.
- (ii) (a) Write **four** methods that could be used to control insect pest damages in crop cultivation.  
(b) The dried and brown colour, circular patches were observed in several places in a paddy field. Name the pest that causes this damage and mention a **non**-chemical controlling method used to prevent this damage.
- (iii) Mention the group of causal organism responsible for following plant diseases.
- (a) Damping off of nursery plants  
(b) Leaf Mosaic in Cucumber  
(c) Root nodules in spinach  
(d) Soft rot in carrot
5. In integrated plant nutrition management, physical, chemical and biological characteristics of soil are improved by using organic manure whereas chemical fertilizers are also used to meet the nutrient demands of the crop.
- (i) (a) Mention **four** types of organic manure that can be added to the crops.  
(b) Write **four** advantages of adding organic manure.
- (ii) Mention **one** direct chemical fertilizer each that provides nitrogen, phosphorus and potassium requirements of crops and state **one** distinguished character of each fertilizer.
- (iii) Mention **three** nitrogen deficiency symptoms found in crops.
6. A high yield with good quality can be obtained in animal husbandry by raising animals in a suitable method with comfortable housing and disease control.
- (i) Write **three** advantages of using deep litter system in poultry management.
- (ii) Mention **three** facts that should be considered in constructing a house for farm animals.
- (iii) (a) Write **two** changes taken place in an udder infected with mastitis.  
(b) Write **two** changes found in milk obtained from a cow affected with mastitis.
- (iv) Mention **two** strategies that could be used to control mastitis.
7. Preservation methods are used to avoid spoilage and preserve the excess food for future use.
- (i) Name **three** preservation methods and write example for each method.
- (ii) Write **two** advantages of using glass containers as packaging for preserved products.
- (iii) Mention **four** basic information that should be included in a label of preserved food product.
- (iv) Write **three** stages of vegetable spoilage from harvesting to reaching the market.







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