

සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved

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81 E I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2022(2023)
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2022(2023)
General Certificate of Education (Ord. Level) Examination, 2022(2023)

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

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

Instructions:

- * 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 given answer sheet.
- * Further instructions are given on the back of the answer sheet. Follow them carefully.

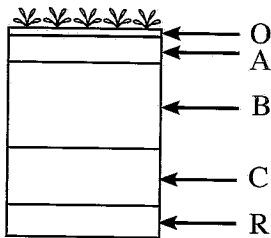
1. The structure that controls the pressure of discharging water from the sluice gate of the tanks constructed in ancient regin is

- (1) Ralapanawa. (2) Bisokotuwa. (3) Pitawana. (4) bund of the tank.

2. The soil mineral component with the diameter of 0.02 mm - 0.002 mm is

- (1) clay. (2) silt. (3) fine sand. (4) coarse sand.

3. A diagram of a typical soil profile is given here. The layers considered as soil depth are,



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

4. Several activities followed by a farmer when harvesting mango yield are given below.

- A - Plucking fruits using a hooked stick fixed with a basket
B - Dumping the plucked fruits on the floor
C - Subjecting fruits to hot water treatment

Out of the above, the correct activities are

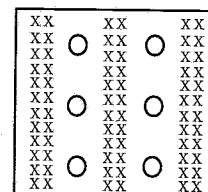
- (1) A and B only. (2) A and C only. (3) B and C only. (4) all A, B and C.

5. What is the correct statement on soil water?

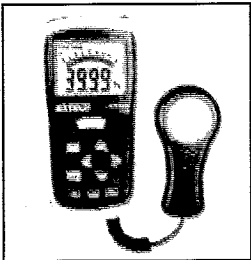
- (1) Soil with field capacity contains only capillary water.
(2) Soil with permanent wilting point contains gravitational water only.
(3) The water losses from the soil due to gravity is hygroscopic water.
(4) Capillary water can easily be absorbed by plants.

6. The cropping pattern of a particular land is shown in the diagram. This is

- (1) mixed cropping.
(2) inter cropping.
(3) relay cropping.
(4) multistoried cropping.



O - Coconut
x - Pineapple

7. Out of the following activities, an example for agronomical weed control method is,
 (1) using rotary weeder in paddy cultivation.
 (2) establishing crops with recommended spacing.
 (3) weeding around coconut plants using mammoty.
 (4) weeding manually in vegetable plots.
8. The cattle management method commonly found in the dry zone of Sri Lanka is
 (1) free range method. (2) semi intensive method.
 (3) intensive method. (4) loose barn method.
9. A physiological disease of cattle is
 (1) mastitis. (2) foot and mouth disease.
 (3) milk fever. (4) haemorrhagic septicaemia.
10.  The measurement taken by the equipment shown in the picture is the
 (1) duration of light exists.
 (2) intensity of light.
 (3) quality of light.
 (4) spectrum of light.
11. In the heap method of making compost, a pointed wooden stick is inserted into the compost heap to examine,
 (1) the amount of microbes in compost. (2) the amount of decomposition.
 (3) moisture and temperature. (4) aeration.
12. In which option of the following table gives the correct information regarding chemical fertilizers?
- | | Fertilizer type | Colour | Nutrient content | Water solubility |
|-----|------------------------|-----------|-------------------------------------|------------------|
| (1) | Urea | white | N - 23% | insoluble |
| (2) | Muriate of Potash | brick-red | K ₂ O - 60% | highly soluble |
| (3) | Triple super phosphate | grey | P ₂ O ₅ - 35% | highly soluble |
| (4) | Rock phosphate | white | P ₂ O ₅ - 50% | insoluble |
13. Examples for propagules called rhizomes and cormes are respectively,
 (1) turmeric and potato. (2) turmeric and colocasia.
 (3) Chinese potato (innala) and red onion. (4) potato and ginger.
14. Plant macro-nutrients, carbon and nitrogen are obtained respectively from
 (1) soil and water. (2) water and soil.
 (3) water and atmosphere. (4) atmosphere and soil.
15. It is observed that the feathers around the anus of chicks were moisten and stuck together with white diarrhoea. This disease is
 (1) coccidiosis. (2) pullorum.
 (3) gamboro. (4) rhanikhet.
16. Several statements on irrigation are given below.
 A - Supplying water in necessary amounts when required is irrigation.
 B - Irrigation should be done until the soil get saturated with water.
 C - In drip irrigation chemical fertilizer can also be applied.
- Out of these, 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.

17. Primary and secondary land preparation are two steps of basic land preparation. The activity/activities of secondary land preparation is/are
 (1) cutting and turning the soil. (2) earthing up to the plant.
 (3) pulverizing soil and preparing plant beds. (4) loosening the soil around plants.
18. The Indian buffalo breeds which are rearing in Sri Lanka for milk production are
 (1) Jersey and Ayrshire. (2) Sindhi and Sahiwal.
 (3) Niliravi and Murrah. (4) Friesian and Surti.
19. The nutrient that provides by adding powdered sea shells when preparing feed rations for farm animals is
 (1) carbohydrate. (2) protein. (3) lipid. (4) mineral.
20. A manually operated equipment used in intercultivation is,
 (1) Japanese rotary weeder. (2) Japanese reversible plough.
 (3) Rotavator. (4) Ridger.
21. The leaves of a stem cutting is removed before planting, in order to
 (1) remove infected leaves. (2) minimize wind damage.
 (3) reduce transpiration. (4) avoid fungal diseases.
22. The correct way of writing the scientific name of paddy is
 (1) *Oryza Sativa*. (2) *Oryza sativa*.
 (3) *Oryza Sativa*. (4) *Oryza Sativa*.
23. The following table shows relative percentages of soil components of A, B, C and D soil samples.

	% Air	% Water	% Minerals	% Organic matter
A	25	25	45	05
B	35	10	30	25
C	05	45	25	25
D	25	05	25	45

The most suitable soil sample for crop cultivation is

- (1) A (2) B (3) C (4) D
24. The duration from flowering to ripening of paddy yield is known as the maturing stage. This duration for all paddy varieties in days is
 (1) 15. (2) 30. (3) 45. (4) 60.
25. An insect pest that damages plant tissues by biting and chewing is
 (1) paddy bug. (2) white fly. (3) epilachna. (4) mealy bug.
26. A main characteristic that should be in a stock plant used in budding is,
 (1) providing high yield. (2) fruiting in every season.
 (3) having a strong root system. (4) having high quality fruiting.
27. In order to check the moisture content of a nursery mixture prepared for vegetable seeds, a student took a small amount of soil to his hand, squeezed it and released. If the moisture content is sufficient,
 (1) the mixture will loosen at once.
 (2) the mixture will loosen gradually.
 (3) the mixture would not loosen and stay as a mould.
 (4) the water in the mixture drips between fingers.
28. In order to determine whether liquid milk is adulterated with wheat flour,
 (1) iodine should be added.
 (2) glycerine should be added.
 (3) a drop of milk should be put on a glass surface.
 (4) a drop of milk should be added into a glass of pure water.

29. It is observed that the internal parts of some big onion bulbs are rotten and smelling badly. The casual agent for this condition is
(1) bacteria. (2) fungi. (3) virus. (4) nematodes.
30. Three statements regarding soil are given below.
A - Soil texture is changed due to frequent soil turning.
B - Transformation of a degraded soil into a cultivable soil is called as soil reclamation.
C - CO₂ percentage in soil air is higher than that of in the atmosphere.
Out of the above, the correct statement/statements is/are
(1) A only. (2) A and B only. (3) A and C only. (4) B and C only.
31. The average annual rainfall in intermediate zone in Sri Lanka is
(1) 1500 mm - 1750 mm. (2) 1750 mm - 2500 mm.
(3) 2500 mm - 3000 mm. (4) 3000 mm - 3500 mm.
32. Statements on the classification of agro climatic and agro ecological zones in Sri Lanka are given below.
A - There are three main climatic zones named wet zone, intermediate zone and dry zone.
B - There are 46 agro ecological zones.
C - The dry zone is divided into two zones as low country dry zone and mid country dry zone.
Out of the above, the correct statement/statements is/are,
(1) A only. (2) B only. (3) A and B only. (4) B and C only.
33. Due to freezing of food,
(1) only function of enzymes is reduced.
(2) only microbial activities are reduced.
(3) microbial activities are completely stopped.
(4) only microbes are destroyed.
34. A chemical used to maintain pink colour of meat in preservation is
(1) Sodium metabisulphite. (2) Sodium benzoate.
(3) Benzoic acid. (4) Sodium nitrate.
35. Enlarged tummy, splitted skin, swollen hands, legs, face and tummy were observed in a two years old child. This disease condition could be
(1) Marasmus. (2) Kwashiorkor. (3) Osteoporosis. (4) Anaemia.
36. The suitable irrigation method for an orange cultivation located in dry zone with high wind and sandy soil is,
(1) flood irrigation. (2) basin irrigation.
(3) sprinkler irrigation. (4) drip irrigation.
37. Out of the following food, the high risk food items that cause food poisoning are,
(1) pumpkin, snake gourd and raddish. (2) papaw, mango and eggs.
(3) green gram, chick pea and fish. (4) chicken, milk and eggs.
38. The packaging done by removing air from the food pack and sealing it to avoid re-entering air is called
(1) aseptic packaging. (2) modified internal environment packaging.
(3) vacuum packaging. (4) tetra packaging.
39. In order to make an acidic soil into a cultivable soil, it could be added with
(1) sulphur. (2) calcium oxide. (3) gypsum. (4) organic matter.
40. Since the end of 2022 the coconut yield is severely affected and leaves turned into yellow due to sucking the sap from the under surface of coconut leaflets. This pest is,
(1) coconut leaf caterpillar. (2) scale insect.
(3) red weevil. (4) white fly.

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81 E I, II

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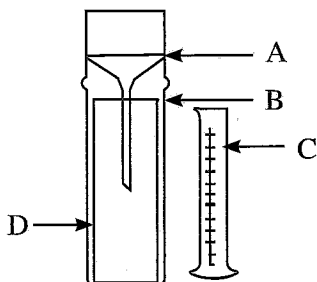
කෘෂි හා ආහාර තාක්ෂණය I, II
விவசாயமும் உணவுத் தொழினுட்பவியலும் I, II
Agriculture and Food Technology I, II

Agriculture and Food Technology II

* Answer five questions only, including the first question and four other selected questions.

1. A farmers' organization in the dry zone, started a farm with the extent of two hectares. In the first phase nursery plants were produced for sale. In addition, fruit and vegetable cultivation was done using pumped water from the agricultural well. Later this farm was gradually developed as an integrated farm.
 - (i) (a) Name **two** vegetable crops that are suitable to plant in nurseries in this farm.
 - (b) Name **two** vegetable crops that can be established without planting in nurseries in this farm.
 - (ii) Write **two non chemical** soil sterilization methods in nursery beds.
 - (iii) (a) Propose an efficient irrigation method suitable for the papaw cultivation in this farm.
 - (b) Write an advantage and a disadvantage of that method.
 - (iv) (a) What is the soil group commonly found in the dry zone?
 - (b) A soil sample taken from this land was slightly moistened and a soil ball was made using two palms. When it was tried to roll the ball, it was broken. What would be the texture of this soil?
 - (v) (a) Mention **two non chemical** methods of weed control for 'Mana' grasses and 'Guini' grasses that are found in this land.
 - (b) Mention **two** uses of these grasses.
 - (vi) (a) Name **two** kinds of plants that are suitable to grow along the fence of this land and their leaves can be utilized for green manure.
 - (b) It was observed that the mature leaves of the chillie plants of this farm turned yellow and the growth was retarded. What would be the deficient nutrient?
 - (vii) Mention **four** categories of crops that are suitable for quadruple crop rotation.
 - (viii) (a) Name **two** Indian dairy cattle breeds which are suitable for rearing in this farm.
 - (b) Out of the main methods of cattle rearing, which is the most suitable method for an integrated farm.
 - (ix) (a) Write **two** other additional units that could be added to this farm in order to develop it as an integrated farm.
 - (b) Mention **two** advantages of maintaining an integrated farm.
 - (x) Mention **two** value added milk products that can be produced with milk in this farm.

2.



- (i) (a) What is the instrument shown in this diagram?
- (b) Name A, B, C and D parts of it.
- (ii) Write **three** facts that should be considered in placing this instrument in order to get readings most accurately.
- (iii) (a) Write **two** importance of soil air.
- (b) Mention **two** effects of soil organisms to increase soil fertility.

3. At present, some farmers tend to do organic crop cultivation as they can get a higher price for organic crop harvests.
- (a) Mention **two** practical issues in using organic manure.
 - (b) Write **two** strategies to enhance decomposition of raw materials in composting.
 - (ii) Write **three** adverse effects of adding chemical fertilizers to the soil.
 - (iii) Describe in brief.
 - (a) direct fertilizers
 - (b) complete fertilizer mixtures
 - (c) incomplete fertilizer mixtures
4. In a chilli cultivation, several plants in some places of the field were wilted and died later. Internal tissues of the stems of died plants were discoloured. When these stems cut and dipped in water, a milky and thick secretion was observed.
- (a) Name this disease and the causal agent.
 - (b) Propose **three** methods to control this disease.
 - (ii) 

piece of cotton wool

Several structures, shown in the diagram were hanged in branches of a fruit bearing mango cultivation.

 - (a) Name the pest that is controlled by using the above structure.
 - (b) What is the chemical used to attract pests in this structure?
 - (iii) Mention **three** common symptoms of viral diseases in crops.
5. Malnutrition in human, occurs due to different issues of food consumption. Spoiled and low quality food also cause adverse effects on human nutrition.
- (a) Mention the **two** types of human malnutrition.
 - (b) Briefly explain the reasons for these **two** types of malnutrition separately.
 - (ii) Write the equation that is used to calculate the body mass index of a person.
 - (iii) (a) Write **two** ways of identifying spoiled food.
 - (b) Mention **two** symptoms found in a person with food toxicity.
6. A new plant obtaining from any part of a plant except seeds is vegetative propagation.
- (i) Write **four** advantages of propagating plants by tissue culture.
 - (ii) (a) In a solar propagator, rooting of shoot cuttings are enhanced. Mention **two** reasons for that.
 - (b) Name **two** hormones used to induce rooting in shoot cuttings.
 - (iii) Explain the steps of wedge grafting in mango with labelled diagrams.
7. There is a high potential in Sri Lanka for animal husbandry.
- (i) (a) Write **four** facts regarding importance of animal husbandry.
 - (b) Write **four** possibilities for cattle management in Sri Lanka.
 - (ii) (a) Write **four** advantages in rearing poultry under intensive system.
 - (b) Mention **three** symptoms of ranikhet disease in poultry and write a preventive measure to protect healthy animals.
 - (iii) Mention **four** requirements of a cattle shed.