

வைகிரேயபுதிய பாடத்திட்டம்/New Syllabus

NEW

81 E I, II

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கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2017 டிசம்பர்
General Certificate of Education (Ord. Level) Examination, December 2017

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

පැය තුනයි
மூன்று மணித்தியாலம்
Three hours

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.

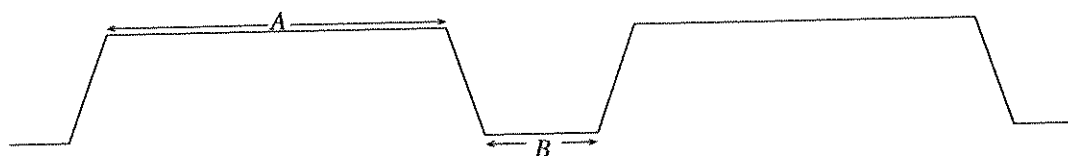
- The canal 'Jaya Ganga' or 'Yodha Ela' which was constructed to convey water from Kala wewa to Thisa wewa, is an example for the developed irrigation technology in the ancient era of Sri Lanka. This canal was constructed by king
 - Wasabha.
 - Dhathusena.
 - Parakramabahu the Great.
 - Mahasen.
- A conversion occurred in Sri Lanka due to the Green Revolution was
 - the unity among farmers by working in "Aththam system".
 - nurturing of the culture by agriculture linked folk art.
 - persuasion of the farmers to apply organic fertilizer for crops.
 - increase of the crop yield by cultivating improved crop varieties.
- A reason that leads to increase of the atmospheric temperature in a particular area is
 - abundance of buildings.
 - abundance of water bodies.
 - abundance of vegetation.
 - high elevation.
- In which row of the following table, the cropping seasons, the monsoon which gives rain in that particular season and the months that receive rainfall are given correctly?

	Cropping season	Monsoon	Months that receive rainfall
(1)	Yala	Southwest	from November to April
(2)	Yala	Northeast	from May to September
(3)	Maha	Southwest	from March to August
(4)	Maha	Northeast	from December to February

- The rock that forms by metamorphism of the igneous rock granite, is
 - Quartz.
 - Gneiss.
 - Marble.
 - Pegmatite.
- Out of the following statements on soil water, which is the **incorrect** statement?
 - The water which flows down through macro pores of soil is gravitational water.
 - The water which retains in micro pores of soil is capillary water.
 - Hygroscopic water can easily be absorbed by plants.
 - Only capillary water and hygroscopic water exist in a soil in field capacity.
- The soil components which lead to increase cation exchange capacity of soil, are
 - silt and clay.
 - clay and humus.
 - silt and fine sand.
 - silt and humus.

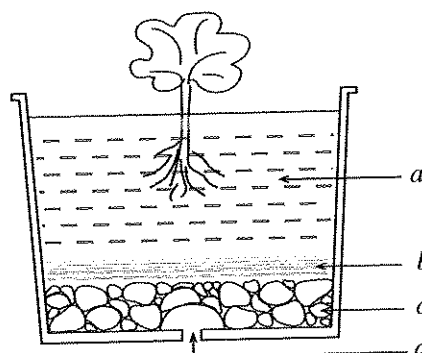
[see page two]

8. An air dried soil ped which was as large as a brick, was let to fall down on the floor from a height of about $1\frac{1}{2}$ metres and the broken particles were observed by a teacher. This experiment is done to find out,
 (1) soil colour. (2) soil texture. (3) soil structure. (4) soil moisture.
9. Some observations found in the environment are listed below.
 A - There are well smoothed rocks found in the stream bottoms.
 B - The sand found in seashore are very fine.
 C - The large rocks are broken into pieces, due to the growth of some plant roots through the cracks of them.
 Out of these, the examples for physical weathering of rocks are
 (1) A and B only. (2) A and C only.
 (3) B and C only. (4) All A, B and C.
10. The time that takes to complete the life cycle of crops is a classification criterion of them. Accordingly, select the answer which contains annual crops only.
 (1) soya bean, paddy, chilli, pepper
 (2) betel, brinjal, cucumber, bitter gourd
 (3) cabbage, tomato, long bean, cinnamon
 (4) maize, green gram, okra, paddy
11. Some crops are recommended to plant in single planting holes and the size of the hole depends on the type of the crop. The size of the planting hole recommended for planting banana is
 (1) $90 \times 90 \times 90$ cm. (2) $60 \times 60 \times 60$ cm. (3) $30 \times 30 \times 30$ cm. (4) $15 \times 15 \times 15$ cm.
12. The diagram shows the vertical sectional view of two adjacent, raised nursery beds, in standard size which were prepared for vegetable seeding.

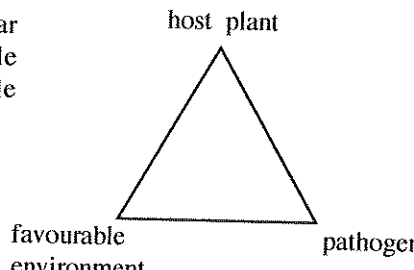


The recommended measurements of the above A and B respectively in cm are

- (1) 50 and 25. (2) 80 and 40. (3) 100 and 30. (4) 125 and 50.
13. The ratio of top soil to compost in recommended mixture that is spread on the top of nursery beds in order to have a good plant growth is
 (1) 1:1. (2) 1:2. (3) 1:3. (4) 2:1.
14. This diagram shows a vertical sectional view of a pot in which a seedling has been planted correctly. The role of c and d is
 (1) reducing the germination of weed seeds.
 (2) supplying nutrients to the seedling.
 (3) draining out the excess water.
 (4) maintaining the temperature of the planting medium.



15. What is the option that includes only the macronutrients essential for plants?
 (1) carbon, hydrogen and nitrogen (2) carbon, nitrogen and boron
 (3) oxygen, phosphorus and chlorine (4) calcium, magnesium and zink
16. Triple Superphosphate is a fertilizer commonly used in crop cultivation. The phosphorus (P_2O_5) percentage of this fertilizer is
 (1) 20%. (2) 27%. (3) 45%. (4) 60%.

17. An activity that helps to increase the rate of decomposing the organic matter in producing compost by heap method is
- (1) covering the heap of organic matter to prevent aeration.
 - (2) removing the cover of the heap monthly, spraying water and mixing the substances.
 - (3) removing the cover of the heap daily and applying water.
 - (4) adding a large amount of straw as organic matter.
18. According to the disease triangle shown in this diagram, it is clear that plant diseases can be controlled by maintaining unfavourable environmental conditions to the pathogen in the field. An example for this strategy is
- (1) sterilization of soil.
 - (2) cultivating resistant varieties of crops.
 - (3) burning infected stubble.
 - (4) increasing the planting distance.
- 
19. The insect pest that damages the crop in both larval and adult stages of its life cycle is
- (1) Aulacophora beetle.
 - (2) rhinoceros beetle.
 - (3) leaf rolling caterpillar.
 - (4) paddy stem borer.
20. When a stem of a tomato plant, which had wilted in the field, was cut and put in to a vessel of water, an ooze was observed. The reason for this disease condition would be,
- (1) a fungus.
 - (2) a bacteria.
 - (3) a nematode.
 - (4) a virus.
21. The duration from flowering stage to the panicle ripening stage of paddy crop in days is
- (1) 30.
 - (2) 45.
 - (3) 50.
 - (4) 60.
22. In naming the hybridized paddy varieties in Sri Lanka, the age of that particular variety also has been taken into account. The age of the paddy variety Bw 351 is
- (1) 3 months.
 - (2) 3 1/2 months.
 - (3) 4 months.
 - (4) 4 1/2 months.
23. Out of the following factors, the essential factors that needed for seed germination are
- (1) carbondioxide and oxygen.
 - (2) carbondioxide and water.
 - (3) oxygen and water.
 - (4) water and sunlight.
24. Out of the following statements on the standards of certified seed paddy, select the correct statement.
- (1) Genetic purity should be 98% or more.
 - (2) Maximum amount of weed seeds that could be exist in 500g of seed paddy is 5g.
 - (3) Maximum amount of mechanically damaged seeds that could be exist in 500g of seed paddy is 200g.
 - (4) Germination percentage should be 100%.
25. The reason for covering the scion with a polythene bag after a grafting is to prevent
- (1) entering pests to the scion.
 - (2) transpiration from the scion.
 - (3) entering water to the scion.
 - (4) wind damages to the scion.
26. The crops that can be propagated by root cuttings are
- (1) sweet potato and manioc.
 - (2) mukunuwenna and kankun.
 - (3) akkapana and begonia.
 - (4) karapincha and bread fruit.
27. The nutrient medium that commonly used in soil-less culture in Sri Lanka is
- (1) Allen Cooper mixture.
 - (2) Albert mixture.
 - (3) sand and rice husk mixture.
 - (4) coirdust and compost mixture.
28. The farming system that carrying out the processes such as, crop cultivation, animal husbandry and energy production together in the same land, by using a byproduct of one production unit as a raw material of another production unit is
- (1) chena cultivation.
 - (2) conservative farming.
 - (3) organic farming.
 - (4) integrated farming.

[see page four]

29. The main objective of 'Post-harvest technology' is
(1) using machinery for crop harvesting.
(2) minimizing loss of harvest by managing the post-harvest factors.
(3) using plastic boxes for transportation of harvest.
(4) using cool rooms to store harvests.
30. The measurements required to calculate the Body Mass Index (BMI) of a person are
(1) body weight and height. (2) birth weight and age.
(3) height and circumference of the waist. (4) blood sugar content and height.
31. The factors affecting food spoilage can be categorized as physical, chemical and biological factors. Out of the following, a chemical factor affecting food spoilage is
(1) moisture in the food. (2) environmental temperature.
(3) enzymic activities occurs in the food. (4) growth of fungi on the food.
32. The food that is spoiled in a very short period of time is known as 'high risk food'. Out of the following, the answer that contains only high risk food is
(1) fish, milk and meat. (2) fish, milk and papaw.
(3) eggs, meat and dried grapes. (4) rice, cake and fruit salad.
33. Out of the following, select the correct statement.
(1) Pasteurized milk is completely free from microorganisms.
(2) Pasteurized milk can be stored under room temperature without spoiling for 7-10 days.
(3) In sterilization of milk all the microorganisms and their spores are destroyed.
(4) In sterilization, milk is heated up to a very high temperature and quickly cooled and stored under a low temperature.
34. An Indian cattle breed reared for milk production in Sri Lanka is
(1) Jersey. (2) Friesian. (3) Sindhi. (4) Ayrshire.
35. Epidemic diseases are the diseases that spread rapidly and are difficult to control. A main epidemic cattle disease in Sri Lanka is
(1) Milk fever. (2) Hemorrhagic Septicemia.
(3) Mastitis. (4) Tick fever.
36. The oestrous cycle of a cow is
(1) 21 days. (2) 30 days. (3) 285 days. (4) 305 days.
37. Out of the main nutrients that should be included in animal foods, the nutrient important for the growth and to repair wasting tissues is
(1) carbohydrate. (2) protein. (3) lipids. (4) vitamins.
38. In preparing animal food rations, the food component that can be included to supply protein is
(1) coconut-poonac. (2) shell grit. (3) maize. (4) rice bran.
39. Animal food can be divided into two main categories as roughages and concentrates. A concentrate food which could be given to cattle is
(1) silage. (2) straw. (3) grass. (4) poonac.
40. When a drop of a milk sample is put on a glass surface it flowed away without indicating a white margine. By this observation it can be concluded that the milk is
(1) infected with microorganisms. (2) mixed with water.
(3) mixed with colourings. (4) mixed with coconut oil.

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[see page five]

නව නිර්දේශය/புதிய பாடத்திட்டம்/New Syllabus

NEW 81 E I, II

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව
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 Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka

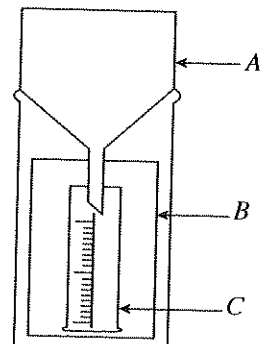
අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2017 දෙසැම්බර්
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කෘෂි හා ආහාර තාක්ෂණය I, II
 விவசாயமும் உணவுத் தொழினுட்பவியலும் I, II
 Agriculture and Food Technology I, II

Agriculture and Food Technology II

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

- In parallel with the 'National Food Production Campaign' which is being implemented at present in Sri Lanka, it is planned to cultivate food crops in the school garden and to establish a plant nursery to produce planting material for the school and the community. Furthermore, it is decided to cultivate vegetables in the school garden.
 - In addition to the vegetable crops, mention **four** other categories of food crops, which can be cultivated in the school garden.
 - Write **two** factors that should be considered when selecting a suitable site to establish the nursery.
 - Name **two** types of nurseries, which can be prepared in order to prevent root damages in transplanting process.
 - Write **two** preventive measures that can be adopted for preventing the nursery seedlings from damping off disease.
 - A student took a grip of soil from the land to be cultivated, moistened it, made as a ball and tried to roll it between two palms. But it was broken. What would be the texture of this soil?
 - Mention **two** measures which can be adopted in order to conserve soil moisture in a cultivated field.
 - The weeds called Kalanduru and Etawara, which are having underground stems were heavily infested over the school garden. Mention **two** non-chemical methods that can be applied to control these weeds successfully.
 - Write **two** effective means of managing organic waste which are collected in school premises.
 - If this school garden is proposed to be developed as an integrated farm, name **two** new units that should be incorporated.
 - Write **two** advantages of rearing poultry in small scale under free range system in home gardens of the students.
- Awareness of weather parameters which influence on crops is important in cultivation.
 - What is the weather parameter measured by using the equipment shown in the diagram?
 - Name the parts A, B and C of this equipment.
 - Write **three** adverse effects of high relative humidity on crop cultivation.
 - Crops can be divided into three categories according to their response, to the day length on flowering. Mention those **three** categories and briefly explain them.



[see page six]

3. Soil degradation is occurred due to soil erosion, soil hardening and changes in physical and chemical properties which are unfavourable for cultivation.
- (a) Name the **three** steps of soil erosion process.
 - (b) Mention **two** soil erosion causatives.
 - (c) Write **two** adverse effects of soil erosion on crop cultivation.
- (ii) Mention **four** measures which could be taken for soil conservation in order to reduce the velocity of water which flows over the surface of sloping crop fields.
- (iii) Write **two** adverse effects of soil hardening on crop cultivation.
4. In applying suitable pest controlling methods, the nature of the life cycles of insect pests and their eating behaviour are important.
- Explain briefly, the complete metamorphosis and incomplete metamorphosis of insect pests with their life cycles and give **two** example for each type of metamorphosis.
 - According to the eating behaviour of insect pests, there are several types of damages done to the crops. Write **two** out of these type damages and for each type mention one insect pest who causes the damage.
 - Write **two** symptoms of Anthracnose disease found on fruits and vegetables and **two** measures that can be taken to control the disease.
5. In vegetative propagation, new plants are produced by various methods such as planting parts of the mother plant, layering, budding, grafting and tissue culture.
- (a) What is meant by plant budding?
 - (b) Plant budding methods are basically categorized into two, according to the number of buds in the scion that used. Mention those **two** budding methods.
 - (c) Write **two** important characteristics which should be in a stock plant which is used in plant budding.
- (ii) Rooting of plant vegetative parts are induced in a solar propagator. Give **two** reasons for that.
- (iii) Write **four** advantages of vegetative propagation.
6. High yields can be expected by proper land preparation to fulfil crop requirements and by using correct crop establishment methods.
- (a) Write **four** objectives of land preparation in crop cultivation.
 - (b) Name **four** types of planting beds which are prepared in crop cultivation.
- (ii) The following is an incomplete table with information on land preparation equipment. Write only the relevant information in A, B, C, D, E and F blanks with the correct letter given on your answer script.
- | Equipment | The step of land preparation that the equipment is used | The power needed to operate the equipment |
|------------------------|---|---|
| Mouldboard plough | Eg: Primary land preparation | Eg: Mechanical power |
| Disc plough | A | D |
| Ridger | B | E |
| Japanese rotary weeder | C | F |
- (iii) Mention **three** advantages of maintaining the recommended space between plants in crop establishment.
7. In order to get maximum production from animal husbandry, the animals should be provided with suitable housing and attention should be paid to other management practices.
- Mention **three** factors that should be considered in selecting a site for a cattle shed.
 - (a) What is meant by artificial insemination in cattle farming?
 - (b) Write **three** advantages of artificial insemination.
- (iii) Mention **three** characteristics of a substance which is used as a litter in deep litter system of poultry management.

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