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නව නිර්දේශය/புதிய பாடத்திட்டம்/New Syllabus

NEW

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව

இலங்கைப் பரீட்சைத் திணைக்களம்

Department of Examinations, Sri Lanka

81 E I, II

අධ්‍යයන පොළ සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2016 දෙසැම්බර්
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2016 டிசெம்பர்
General Certificate of Education (Ord. Level) Examination, December 2016

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 you consider as *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.

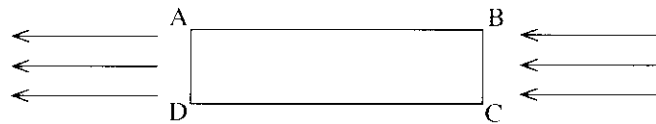
- The king who was worshipped as 'Minneri God' because of the great service done for the upliftment of irrigation in Sri Lanka is
(1) Parakramabahu. (2) Wasabha. (3) Mahasen. (4) Akbo.
- Based on annual rainfall and elevation, Sri Lanka is divided into agro climatic zones. Accordingly the agro climatic zone with higher annual rainfall than 2500 mm and higher elevation than 900 m is referred to as
(1) low country wet zone. (2) up country wet zone.
(3) low country intermediate zone. (4) mid country wet zone.
- Several statements regarding weather parameters are mentioned below.
A - Relative humidity is expressed as a percentage
B - Wind velocity is measured in kilometres per hour
C - Light intensity is measured in lux
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.
- The relative percentages of soil components of four soil samples are given in the following table.

	Water(%)	Air(%)	Minerals(%)	Organic Matter(%)
A	45	05	25	25
B	25	25	45	05
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.
- Separation and splashing of soil particles due to falling rain drops to the earth surface is referred to as splash erosion. This type of soil partial separation could be minimized by
(1) ploughing according to contour lines. (2) making terraces.
(3) mulching the soil. (4) applying SALT method.
- A soil sample, taken from a cultivating land, was slightly moistened and rolled in between two palms. But, it failed to make a ball. According to this observation, this soil is
(1) a sandy soil. (2) a clay soil.
(3) a clay loam soil. (4) a sandy loam soil.

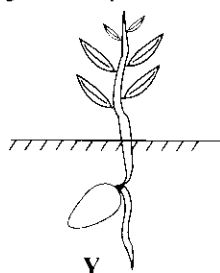
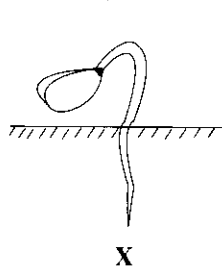
7. What is the correct statement regarding the soil moisture content suitable for optimum crop growth?
- Should at saturated level.
 - Should at field capacity level.
 - Remain in between saturated level and field capacity level.
 - Remain in between field capacity level and wilting point.
8. The cation exchange capacity of a soil depends on the amount of
- sand and silt in that soil.
 - sand and gravel in that soil.
 - humus and silt in that soil.
 - clay and humus in that soil.
9. According to the scientific classification of crops, a crop that belongs to the family Araceae is
- Mango.
 - Ginger.
 - Rubber.
 - Coconut.
10. The botanical name of paddy is correctly written as
- Oryza sativa* L.
 - Oryza sativa*
 - Oryza sativa L.
 - Oryza sativa
11. Out of the followings activities that belong to intercultivation are,
- cutting and inverting the soil.
 - palvarizing and levelling the soil.
 - cutting planting holes and making planting beds.
 - loosening the soil around the plants and earthing up the soil to the base of the plants.
12. The following diagram depicts a nursery bed prepared for soil sterilization by laying straw and paddy husks alternately. The arrows show the wind blowing direction.



In order to have a better sterilization, fire setting should be started at the

- AB side.
 - AD side.
 - BC side.
 - DC side.
13. Out of the following irrigation methods, the method that requires the largest amount of water is
- furrow irrigation.
 - flood irrigation.
 - basin irrigation.
 - sprinkler irrigation.
- To answer the questions number 14 and 15 consider the following activities.
- Mulching the soil.
 - Mixing chemical fertilizers to the soil.
 - Cutting drains in the cultivation land, laying stones into the drains and closing them with soil.
 - Removing weeds.
14. The activities that could be applied for soil water conservation are
- A and B only.
 - A and D only.
 - B and C only.
 - C and D only.
15. An activity that could be applied as a drainage method is
- A.
 - B.
 - C.
 - D.
16. Out of the following substances, the most suitable substance that could be used as high quality green manure is
- dried leaves fallen from trees.
 - well-matured raw leaves of plants.
 - immature ipil ipil leaves.
 - half-matured glyricidia leaves.
17. The chemical fertilizer, that is reddish brown in colour, exists as crystals and easily soluble in water is
- urea.
 - triple super phosphate.
 - muriate of potash.
 - rock phosphate.
18. What is the choice that includes only the essential micro nutrients required in plant nutrition?
- zinc, copper, nitrogen and calcium
 - magnesium, potassium, calcium and sulphur
 - copper, boron, nitrogen and phosphorus
 - zinc, copper, manganese and boron

19. Which is the broad leaved weed plant that grows in terrestrial?
 (1) Kalanduru (2) Kudametta
 (3) Diya Siyambala (4) Monara Kudumbiya
20. What is the group of organisms that cause diseases such as powdery mildew and rust in crops?
 (1) bacteria (2) fungi (3) virus (4) phytoplasma
21. The insect pest with complete metamorphosis, which attacks leaves and roots of crops that belong to cucurbitaceae family is
 (1) cucurbit fly. (2) aphid. (3) aulachophora. (4) epilachna.
22. What is the choice that includes only natural enemies which are important in insect pest control?
 (1) dragon fly, red ant and mealy bug (2) thrips, praying insect and spider
 (3) red ant, spider and praying insect (4) lady bird, white fly and aphid
23. The minimum germination percentage of certified paddy seeds should be
 (1) 85%. (2) 90%. (3) 95%. (4) 99%.
24. The following X and Y diagrams depict two types of seed germination.



	X	Y
A	maize	chick pea
B	paddy	brinjal
C	beans	chick pea
D	green gram	chillies

According to the above X and Y diagrams, the row which shows the examples for these two types of germination mentioned correctly is?

- (1) A (2) B (3) C (4) D
25. The seed that delay its germination due to growth inhibitors which exist in the seed coat is
 (1) mango. (2) tamarind. (3) papaw. (4) maize.
26. The most suitable method to propagate foliage plants such as begonia, peperomia, sansavaria etc. is
 (1) planting stem cuttings. (2) planting root cuttings.
 (3) planting leaf cuttings. (4) layering.
27. After grafting, the scion is covered by a polythene bag in order to control
 (1) insect damages. (2) diseases.
 (3) transpiration. (4) breaking it by wind.
28. When a T-shaped cut is applied to the stock plant in budding, what is the suitable shape of the scion for that cut ?
 (1) (2) (3) (4)
29. A permanent protected structure used when growing under controlled environment is
 (1) a plant bed cover. (2) a row cover.
 (3) a simple solar propagator. (4) a net house.
30. When compared with the conditions of the atmosphere, in a simple solar propagator.
 (1) temperature and light are lower.
 (2) relative humidity and temperature are higher.
 (3) relative humidity is lower and temperature is higher.
 (4) relative humidity is higher and temperature is lower.
31. What is the correct statement regarding integrated farming?
 (1) It is a suitable method for small lands
 (2) Initial cost and inputs are low
 (3) Risk and uncertainty is low
 (4) High technical knowledge is not needed

32. Several statements regarding post harvest losses in vegetable and fruits are given below.
 A - Post harvest losses in Sri Lanka at present is about 5%-10%.
 B - Post harvest losses increase by heaping the harvest for a long period of time.
 C - Post harvest losses can be reduced by sorting and grading of the harvests.
 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.
33. The recommended crops to be grown in ridge and furrow beds are
 (1) sweet potato, innala, and ground nuts.
 (2) brinjal, chillies and tomatoes.
 (3) ginger, turmeric and maize.
 (4) carrot, beat and leeks.
34. Some individuals are highly sensitive to certain food and eating such food causes allergy. Examples for such food are
 (1) potato and colocasia (kiri ala). (2) prawns and tomatoes.
 (3) butter and milk. (4) bread and maize.
35. In which choice the preservation of milk is correctly shown?
 (1) Milk $\xrightarrow{\text{deep freezing}}$ Yoghurt (2) Milk $\xrightarrow{\text{concentrating}}$ Curd
 (3) Milk $\xrightarrow{\text{spray drying}}$ Milk powder (4) Milk $\xrightarrow{\text{sterilization}}$ Cheese
36. The crops that bear fruit at the due age, although it is grown in either Yala season or Maha season are referred to as
 (1) long day crops. (2) short day crops.
 (3) day neutral crops. (4) photo periodic sensitive crops.
37. Out of the following cattle breeds, which breed gives highest milk yield under proper management?
 (1) Red sindhi (2) Jersey (3) Friesian (4) Sahiwal
38. A buffalo bred of foreign origin, reared in Sri Lanka with white colour on its forehead, ends of legs and switch is
 (1) Mura. (2) Soorthy. (3) Niliravi. (4) Ayrshire.
39. Chicks were found to be gathered together drowsily and their faecal matter were stuck as a white paste around their anal region. This disease could be
 (1) coccidiosis. (2) pullorum.
 (3) raniket. (4) nematode infection.
40. In broiler management the recommended space for one bird is
 (1) 1/2 square feet. (2) 1 square feet. (3) 2 square feet. (4) 3 square feet.

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නව නිර්දේශය/புதிய பாடத்திட்டம்/New Syllabus

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இலங்கைப் பரீட்சைத் திணைக்களம்

Department of Examinations, Sri Lanka

81 E I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2016 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

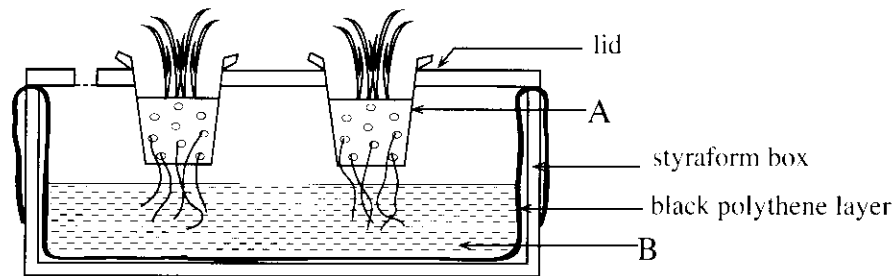
* Answer **five** questions only, selecting the **first** question and **four** others.

- Basically, energy requirement of Sri Lankans is supplied by paddy, the main food crop of Sri Lanka. By maintaining a well planned home garden, other food crops can also be grown and family members are able to get a balanced diet.
 - Name **two** crops that could be grown in a home garden which give protein for family diet.
 - Name **two** equipment that could be used in intercultivation of a small home garden.
 - Mention **two non-chemical** insecticides that could be prepared domestically in order to control insect pest in a home garden.
 - (a) What is the advantage of neridoko nurseries when compared with nursery beds?
(b) Write the ingredients needed for neridoko nursery mixture and their proportion.
 - Name **two** chemical fertilizers that could be added to the soil in order to overcome nitrogen deficiency in a crop.
 - Write **two adverse** effects caused by poor drainage of soil on crop cultivation.
 - (a) What is meant by soil structure?
(b) Write **three** main soil structures found in Sri Lanka.
 - Write **two** characteristics of improved paddy varieties when compared to the traditional paddy varieties.
 - Mention **two non-chemical** methods that could be applied in order to prevent emerging weeds in a paddy cultivation.
 - Name **two** poultry breeds recommended to be reared for egg production.
- The two basic environmental factors that affect crops are the soil and the climate. By proper management of these two factors the crops can successfully be grown.
 - (a) Write **two** advantages of adding organic manure to the soil in crop cultivation.
(b) Write **two** methods of increasing the efficiency of chemical fertilizer applied to the soil in crop cultivation.
 - Explain briefly the difference between weather and climate.
 - An incomplete table quoted from a field note book of a student who is following Agriculture and food technology subject is given below.
Write **only the relevant details** for the blanks named as A, B, C and D on your answer script.

Climate Zone	Mainly receiving monsoon rain	The time period which monsoon rain received(months)
Wet Zone	A	B (from to)
Dry Zone	C	D (from to)

3. In vegetative propagation of plants, some times natural propagules are used. In addition to this in propagation of some plants, planting stem cuttings, budding, tissue culture etc. also practised.
- Name **two** natural vegetative propagules and give one example for each of them.
 - Explain the process of aerial layering with labeled diagrams.
 - Write **two** advantages of plant propagation by tissue culture.
 - Mention **two** types of hormones used to induce rooting of stem cuttings.

4. The diagram depicts a simple method of soilless culture which can be prepared domestically.



- What is the name of this method of soilless culture.
 - Name a planting medium which could be filled in vessel A.
 - What is the use of solution B?
 - Mention **two** examples which could be used as solution B.
 - Mention **two** advantages of soilless culture.
 - Mention **two** strategies which could be followed in order to control temperature increase in a greenhouse.
5. A food can get spoiled at any stage from production to consumption. Therefore food preservation is important.
- Mention **four** physical factors that cause food spoilage.
 - Write **two** importance of food preservation.
 - What is the meaning of 'value addition of food'?
 - Mention **two** methods of value addition of food and give one example for each of them.
 - Mention **two** facts that should be included essentially on the label of a food package.
 - Name **two** natural substances that are used for food packing.
6. Post harvest losses of crops are affected not only by the activities done after harvesting yields, but also by aftercare operations done in the field.
- Improper irrigation causes post harvest losses in some crops. Write **two** examples for such instances.
 - Mention **two** stages that post harvest losses occur within the process of conveying harvested yield to the consumer.
 - Write **four** activities that could be taken to prevent post harvest losses of vegetables and fruits.
 - Mention **two** hygienic problems that occur due to the consumption of adulterated food found in the market.
7. The most common farm animal reared in Sri Lanka are cattle and poultry.
- In Sri Lanka, six cattle management zones are identified by the Department of Animal Production and Health. Mention **four** zones out of them.
 - Write **three** heat signs shown by a cow.
 - The spreading of chicks in a brooder, indicates the suitability of the temperature in it. Explain by diagrams, the way of spreading chicks in a ground brooder at optimum, low, and high temperatures.