

G.C.E (A/L) Support Seminar - 2015

Agricultural Science 1

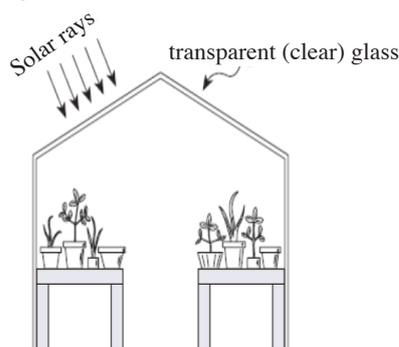
Two hours

Instructions::

- * Answer all questions.
- * Read carefully and follow the instructions given overleaf in the answer script.
- * Select the correct or the most appropriate answer among (1), (2), (3), (4) and (5) answers for questions 1 to 50 and place (X) as per the instructions given overleaf of the answer script.

01. The cinnamon, sugar cane and horticultural crop research stations are located in,
(1) Matale, Agalawatta and Gannoruwa, respectively.
(2) Kamburupitiya, Udawalawa and Gannoruwa, respectively.
(3) Ambalanthota, Mahailuppallama and Matale, respectively.
(4) Kandy, Udawalawa and Bandarawela, respectively.
(5) Kamburupitiya, Matale and Seetaeliya, respectively.
02. The examples for primary soil minerals are,
(1) Quartz and Calcite.
(2) Feldspar and Montmorillonite.
(3) Quartz and Feldspar.
(4) Kaolinite and Quartz.
(5) Feldspar and Hematite.
03. Several statements about photoperiodism are given below.
A - Flowering of plants is induced by the phytochrome which absorb red light.
B - The florigen enzyme is necessary to stimulate the flowering in plants.
C - The artificial stimulation of flowering in plants is known as photoperiodic stimulation.
- The true statement/statements of the above is/are,
(1) A only. (2) B only. (3) C only.
(4) A and B only. (5) A and C only.
04. The examples for the agriculture related industries in ancient Sri Lanka are,
(1) textile, meat and milk industries.
(2) sugar, milk and kitul industries.
(3) textile, ghee and rice industries.
(4) rice, animal feed and rubber industries.
(5) tea, rubber and milk industries.
05. The processes like leaching, evaporation and fixing make the nutrient unavailable or to leave the nutrients from soil. The nutrients which become unavailable due to these processes are,
(1) calcium, nitrogen and phosphorus, respectively.
(2) nitrogen, phosphorous and calcium, respectively.
(3) phosphorus, calcium and nitrogen, respectively.
(4) calcium, phosphorous and nitrogen, respectively.
(5) nitrogen, potassium and phosphorous, respectively.
06. In the rumen,
(1) the cellulose in the diet is digested by the cellulase enzyme secreted from rumen wall.
(2) the acetic acid produced is useful to control the pH in the abomasum.
(3) the volatile fatty acids produced are useful to produce protein in the body.
(4) the ammonia produced is released by eructation.
(5) proteins are produced from non-protein nitrogen.

07. A rough sketch of a greenhouse is shown below.



The basic function of the clear glasses is,

- (1) to reduce the radiation that enters the green house.
 - (2) to allow the radiation with all the wave lengths to enter and leave.
 - (3) to reduce all the radiation to leave the glasshouse.
 - (4) to allow short wave radiation to enter but to reduce the long wave radiation to leave.
 - (5) to allow the long wave radiation to enter and to reduce short wave radiation to leave.
08. The seed treatment method which is used in preparing papaya, tomato and passion fruit seeds for planting is,
- (1) removal of seed coat and washing by clean water.
 - (2) scratch the seed coat.
 - (3) dipping the seeds in 0.1N Nitric Acid first and then wash by clean water.
 - (4) exposure to red light.
 - (5) mixing the seeds with ash or sand, rubbing and wash by clean water.
09. The wet- thermal sterilization is used in tissue culture process to sterilize,
- (1) forceps and knives.
 - (2) culture media.
 - (3) glassware.
 - (4) explants.
 - (5) vitamins.
10. A farmer cultivated ginger in his coconut land. The cropping pattern adopted here is,
- (1) mixed cropping.
 - (2) mono cropping.
 - (3) inter cropping.
 - (4) relay cropping.
 - (5) crop rotation.
11. A major portion of the mammary gland development of a cow occurs during,
- (1) puberty stage.
 - (2) mature stage.
 - (3) early stage of the pregnancy.
 - (4) later stage of pregnancy.
 - (5) first month after calving.
12. Hemocytometer is used to,
- (1) determine the concentration of sperm cells in a sperm sample.
 - (2) determine the hardness of fruits.
 - (3) measure the soil resistance.
 - (4) determine the sugar content of fruits.
 - (5) measure the total solid content in milk.
13. The application rate of a wetttable powder insecticide is 3 kg/ha. If the active ingredient content is 80%, the amount of active ingradient required for 0.2 ha is,
- (1) 0.5 kg
 - (2) 0.75 kg
 - (3) 1.25 kg
 - (4) 1.87 kg
 - (5) 0.48 kg

14. White moulds were observed when a compost pile was turned. The conclusion that can be arrived through this observation is, that
- (1) the composting process is started.
 - (2) the starter mixture is used at sufficient quantities.
 - (3) the toxin producing microorganisms are present.
 - (4) proper fungal growth is present due to the application of water in sufficient quantities.
 - (5) the activity of beneficial microorganisms for composting has not been initiated.

15. A student reported following facts as the reasons for poor drainage.
- A – Existence of water sources above the croplands
 - B – Presence of impermeable layers in very deeper layers of the soil
 - C – Continuous ploughing for same depth

Of the above facts, the actual reason/ reasons for poor drainage is/are,

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

16. Several steps of seed germination process is given below.

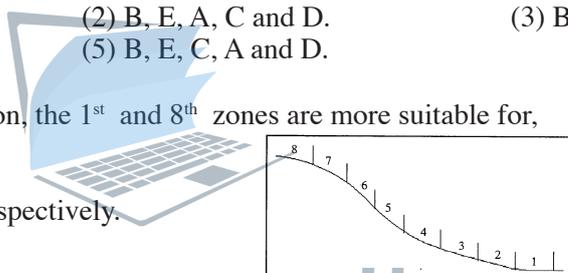
- A – Activation of enzymes
- B – Water absorption
- C – Immergence of seedlings
- D – Start of growth
- E – Split of seed coat

The chronological order of seed germination process is,

- (1) B, C, D and E.
- (2) B, E, A, C and D.
- (3) B, E, A, D and C.
- (4) B, A, D, E and C.
- (5) B, E, C, A and D.

17. According to the land use classification, the 1st and 8th zones are more suitable for,

- (1) rice and vegetables, respectively.
- (2) rice and eucaliptus, respectively.
- (3) vegetable crops and eucaliptus respectively.
- (4) rice and fruit crops, respectively.
- (5) field crops and tea, respectively.



18. If the irrigation efficiency of a soil is 80% and net irrigation requirement is 12 cm, the gross irrigation requirement is,

- (1) 6.6 cm
- (2) 9.6 cm
- (3) 15.0 cm
- (4) 40.0 cm
- (5) 68.0 cm

19. A few statements about lath houses are given below.

- A – It belongs to semi permanent propagation structure category.
- B – A structure use to increase the inside temperature.
- C – More suitable for the areas like Nuwaraeliya.
- D – The basic objective is to provide shade and protect crops from wind.

Of the above statements, the true statements are,

- (1) A and B only
- (2) A and C only
- (3) A and D only
- (4) A, B and C only
- (5) B, C and D only

20. When plants are grown in containers under soilless culture method, the most suitable culture medium is,

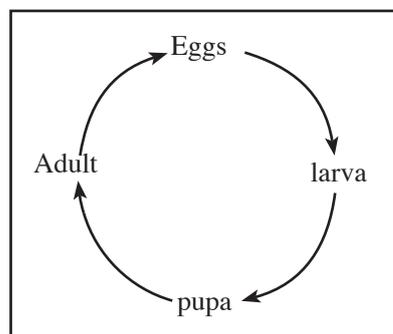
- (1) coir pith medium.
- (2) B₅ medium.
- (3) brick pieces.
- (4) MS medium.
- (5) potato-dextrose medium.

21. The red colour (R) of Hendirikka flower is dominant to white colour (r). The yellow colour (Y) of the seed is dominant to green colour (y). The ratio of pure bred plants with white flowers and green seeds from a rrYy X RrYy cross is,

- (1) 0/4.
- (2) 1/4.
- (3) 0/8.
- (4) 1/8.
- (5) 1/16.

22. In the seed certification process, the contact farmers registered at government farms produce,
- (1) breeder seeds only.
 - (2) certified seeds only.
 - (3) breeder and foundation seeds.
 - (4) breeder and registered seeds.
 - (5) registered and certified seeds.

23.

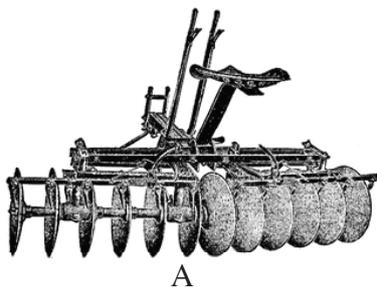


The orders of insects show the type of metamorphosis shown in the above figure are,

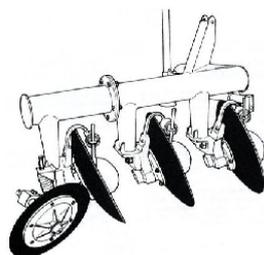
- (1) Orthoptera, Homoptera, and Hemiptera.
 - (2) Lepidoptera, Diptera and Coleoptera.
 - (3) Lepidoptera, Orthoptera and Homoptera.
 - (4) Lepidoptera, Diptera and Hemiptera.
 - (5) Coleoptera, Thysanoptera and Homoptera.
24. A few statements on chena cultivation are given below.
- A – Mainly use family labour.
 - B – Mixed cropping pattern can be observed.
 - C - Practice crop rotation.
 - D – Mainly practiced in the Wet Zone of Sri Lanka.
- The correct statements from the above are,
- (1) A and B only
 - (2) A and C only.
 - (3) B and C only
 - (4) A,B and C only
 - (5) A, C and D only.
25. There is a general concept that a cup of tea after a meal is not advisable. The reason is that,
- (1) tea changes the pH of the diet and disturbs the digestion and absorption.
 - (2) the tannin contains in tea reduce the absorption of iron in the diet.
 - (3) the consumption of tea reduces the stomach space required for food digestion.
 - (4) the chemical compounds in tea inactivate the enzymes required for the food digestion.
 - (5) the tannin present in tea, increases the cholesterol percentage in the body.
26. The majority of the cattle population in Sri Lanka distributed in,
- (1) Jaffna peninsula and low country wet zone.
 - (2) Hill country and low country wet zone.
 - (3) Coconut triangle and dry zone.
 - (4) Coconut triangle and mid country.
 - (5) Dry zone and hill country.
27. The hardest challenge face by a breeder involve in cattle breeding is,
- (1) to identify the activity of the uterus.
 - (2) to identify the diseases in the ovary.
 - (3) to select a bull for insemination.
 - (4) to identify the heat.
 - (5) to find equipments required for breeding.

28. In integrated pest management, the priority is given to,
- (1) legislative methods.
 - (2) mechanical methods.
 - (3) agronomic method.
 - (4) chemical methods.
 - (5) biological method.

- Following figures show several land preparation equipments. Use them to answer question 29 and 30.



A



B



C

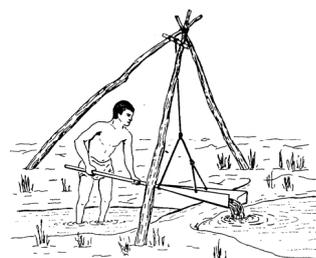
29. The equipment / equipments used for secondary land preparation is/are,
- (1) A only.
 - (2) B only.
 - (3) C only.
 - (4) A and B only.
 - (5) A and C only.
30. The most suitable equipment/equipments to be used in turning the soil which contain rocks and roots is / are
- (1) A only.
 - (2) B only.
 - (3) C only.
 - (4) A and B only.
 - (5) B and C only.
31. HACCP is a quality system,
- (1) important for food product promotion.
 - (2) that guarantee the health safety of food products within a food factory.
 - (3) that guarantee the health safety in marketing food products.
 - (4) that is important to control the hazards at different stages of a production process.
 - (5) that certify the food production process.
32. A student made following statements as the results of the parboiling of rice.
- A – The small starch granules in the rice seed gelatinized and forms one starch granule.
B – The digestion becomes easy as the proteins in rice become amino acids.
C – As the lipase enzyme is destroyed, keeping quality of rice is improved.
D – Removal of husk become difficult.

Of the above, the true statements are,

- (1) A and B only.
 - (2) A and C only.
 - (3) A and D only.
 - (4) A, B and C only.
 - (5) A, B and D only.
33. A student who wanted to study different physiological processes taking place in plants, remove a circle of bark in a branch of a mango tree. The physiological process he expected to learn is,
- (1) ascent of sap.
 - (2) transpiration.
 - (3) root pressure.
 - (4) translocation
 - (5) mineral absorption.

- Use the following diagram to answer question 34.

34. The above diagram shows,
- (1) a traditional method of water lifting
 - (2) a mechanical pest control method.
 - (3) a traditional land preparation method.
 - (4) a method to improve drainage.
 - (5) a method to apply organic fertilizer to the soil.



35. An invasive weed which was introduced as an ornamental plant is,
- (1) Alligator.
 - (2) Lantana.
 - (3) Yoda Nidikumba.
 - (4) Asparagus
 - (5) Cactus

36. The tips of several jack plants were eaten by a goat. Thereafter, these plants were not grown taller. The reason for this situation is,
- (1) the photosynthesis process was lowered as the leaves were eaten.
 - (2) the plants were infected by pathogenic microorganisms entered through the wounds of the jak plant.
 - (3) the growth inhibitors entered to the plants through goat saliva.
 - (4) the production of auxin is prevented as the tips of the plants are removed.
 - (5) as the enzyme production in the tips is stopped, the physiological processes are weakened and the growth is retarded.

37. At the time of Student noted down following as maturity indexes used for harvesting few agricultural products.

- A – bright outer cover is appearing in avocado
- B – Before immersing the petiole of the flower in lettuce leaves
- C – At the time of angular shape is present in banana
- D – At the time of cutaneous skin is formed around grapes

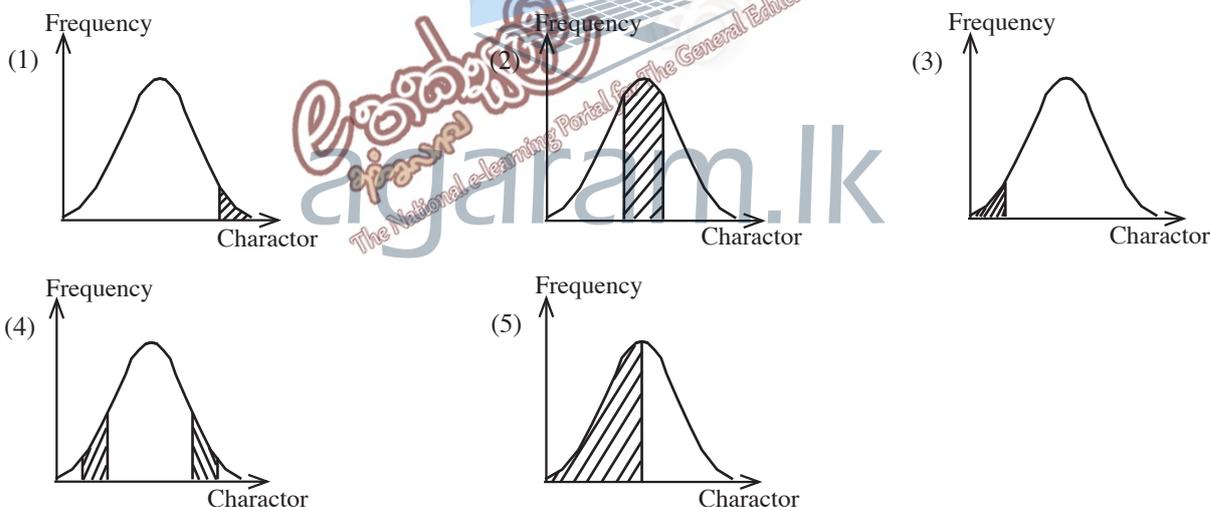
The true maturity indexes are,

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

38. A broiler farmer wanted to rear broiler chicks to supply an order of 1000 broilers. If the price of a day old chick is 40 rupees and the mortality rate is 5%, the total expenditure required for purchase day old chick is,

- (1) Rs. 2, 000
- (2) Rs. 36, 200
- (3) Rs. 42, 000
- (4) Rs. 42, 105
- (5) Rs. 200, 000

39. What is the graph that represent most suitable group of individuals to be used for a particular character. as parents from a plant population with genetic variability.



40. A few statements about harmful nematodes for crops are given below.

- A - Cist forming nematodes are difficult to control.
- B - The eggs of the cist forming nematodes are covered with a thick wall.
- C - The cist forming nematodes are able to hibernate even without host plant.

Of the above Statements,

- (1) A is correct and only B explains A.
- (2) A is correct and only C explains A.
- (3) A is correct and B and C explain A.
- (4) A is correct and C is incorrect.
- (5) A and B are correct but C is incorrect.

41. A farmer used grasses with 75% water content for making hay. The weight of the prepared hay is 24 kg. If the water content of the hay is 25%, what is the weight of the grasses that used for hay preparation?

- (1) 6 kg (2) 18 kg (3) 32 kg
 (4) 48 kg (5) 96 kg

42. Following are several diseases found among cattle.

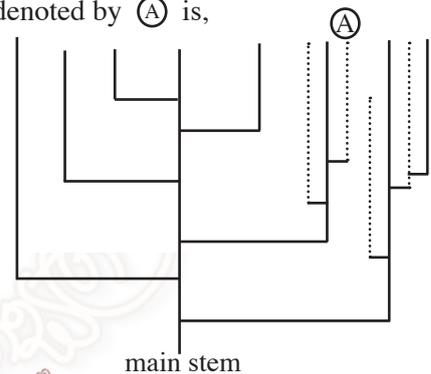
- A – Pneumonia
 B – Milk fever
 C – Hemorrhagic Septicemia
 D – Ketosis

Of the above, the infectious diseases are,

- (1) A and B only (2) A and C only (3) A, B and C only
 (4) A, C and D only (5) B, C and D only

43. The following figure indicates the tillering habit of rice. The tiller denoted by (A) is,

- (1) the tertiary tiller in the first primary tiller.
 (2) the secondary tiller of the second primary tiller.
 (3) the secondary tiller in the third primary tiller.
 (4) the secondary tiller in the fourth primary tiller.
 (5) the tertiary tiller in the fifth primary tiller.



44. Price elasticity of demand is,

- (1) the quantitative response of demand to the change in the factors determining the demand.
 (2) the quantitative response of demand to the change in the prices of the production factors
 (3) the quantitative response of demand to the change in the prices of substitute goods.
 (4) the quantitative response of demand to the change in the income.
 (5) the quantitative response of demand to the change in the price of a product.

45. Given below are several plant diseases.

- A - soft rot, vascular wilting, crown gall
 B - leaf mosaic, soft rot, anthracnose
 C - soft rot, leaf spot disease, vascular wilt
 D - yellowing of leaves, soft spots, leaf mosaic

The group that contain bacterial diseases is,

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

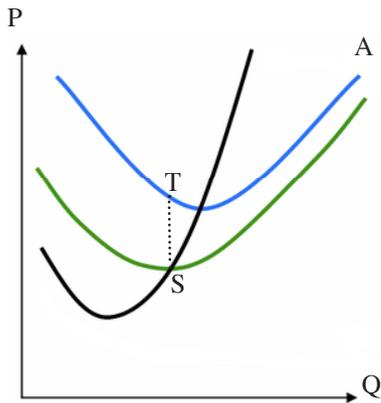
46. The pink colour in some places of quartz deposits is changing at Namal Uyana. The process responsible for this change is,

- (1) the minerals in the rocks react with oxygen and form other compounds.
 (2) the expansion of rocks due to heavy sunlight.
 (3) the rock surface becomes dirty due to human activities.
 (4) the rock surface becomes soft due to rain.
 (5) the formation of chemical compounds through the dissolving of minerals by frequent acid rains.

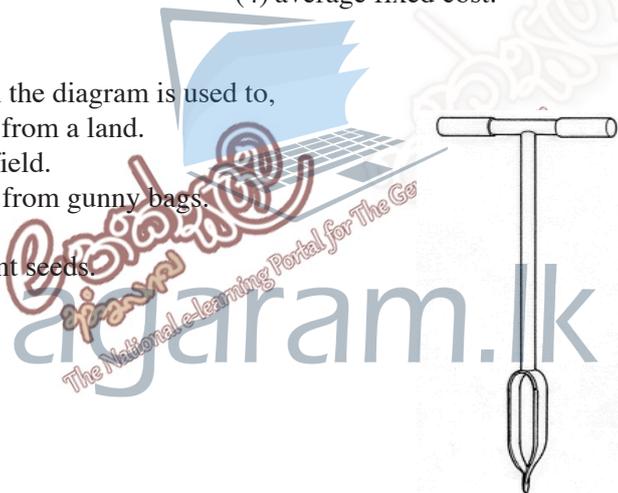
47. It is revealed that the required N amount and the available N in the soil of a banana plantation is 312 kg/ha and 112 kg/ha, respectively. The amount of urea to be applied to 1 ha of this field is,

- (1) $\frac{46}{100} \times 312$ Kg (2) $\frac{312}{46} \times 200$ Kg (3) $\frac{100}{46} \times 200$ Kg
 (4) $\frac{112}{312} \times 100$ Kg (5) $\frac{46}{100} \times 112$ Kg

- Use the following graph to answer question 48 and 49.



48. The curve represented by A is,
- (1) average fixed cost curve.
 - (2) average variable cost curve.
 - (3) total variable cost curve.
 - (4) marginal cost curve.
 - (5) average total cost curve.
49. The vertical difference between T and S indicates,
- (1) marginal cost.
 - (2) average variable cost.
 - (3) average total cost.
 - (4) average fixed cost.
 - (5) total variable cost.
50. The instrument shown in the diagram is used to,
- (1) obtain a soil sample from a land.
 - (2) prepare beds in the field.
 - (3) obtain seed samples from gunny bags.
 - (4) intercultivation.
 - (5) drill the soil and plant seeds.



G.C.E.(A/L) Support Seminar - 2015

Agricultural Science II

Three hours

Part A - Structured Essay

Answer all question in this paper itself.
(10 marks are given for each question)

01. A. Plantation crops were given priority during the British rule in Sri Lanka.

(i) Name two plantation crops introduced by British to Sri Lanka.

- a
- b

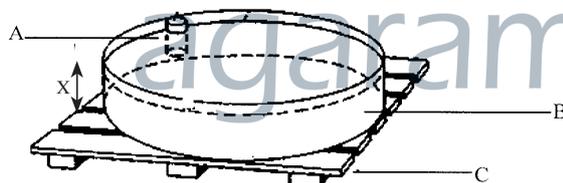
(ii) State two advantages of plantation agriculture.

- a
- b

(iii) State three **non - traditional** crops currently grown for the export market.

- a
- b
- c

B. An evaporation pan established in an agro - meteorological station is given bellow.



(i) Name parts labelled as A, B and C

- A
- B
- C

(ii) What is the importance of A?

.....

(iii) What is the height of "X" in cm?

.....

(iv) State two procedures to be adapted in establishing this equipment.

- a
- b

(v) How the reading of this equipment would be adjusted in a rainy day?

.....
.....

C. Green leaves are useful organic manure for a crop field.

(i) State four legume plants that would be used as green manure.

- a
- b
- c
- d

(ii) Write the importance of using legumes as green manure.

.....

(iii) List three factors which expedite the decomposing rate of green manure.

- a
- b
- c

D. Compacted soil would be Observed by the end of every Cropping season.

(i) State two physical soil properties which could be changed due to soil Compaction.

- a
- b

(ii) List two equipments operated by mechanical power to prepare a compacted soil for cultivation in the next season.

- a
- b

E. Grading is the next step after cleaning the harvest.

i) What do you mean by grading of harvest?

.....
.....

ii) Write two advantages of grading the harvest.

- a
- b

02. A. Integrated farming is a farming system that increase the land use efficiency.

(i) State three units available in integrated farming.

- a
- b
- c

(ii) State a specific character that would be observed in using resource in an integrated farm.

.....

(iii) State two instances that prove the environmental friendliness of this farming method.

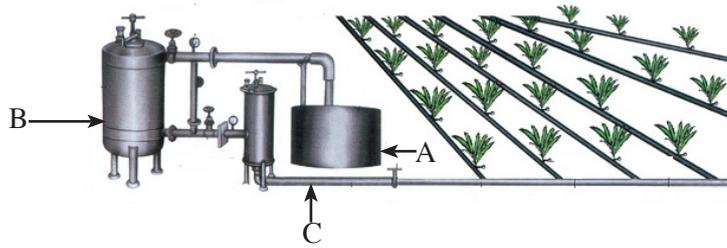
- a
- b

B. Maintain the root zone at the optimum moisture condition is done in drip irrigation.

(i) State the optimum moisture level for crop cultivation

.....

(ii) Name the parts labeled as A, B, and C in the drip irrigation system shown below .



A C
 B

(iii) List three disadvantages of drip irrigation.

- a
- b
- c

C. The A, B and C figures depicts faulty conditions observed in a plant nursery. Based on these figures, complete the following table.

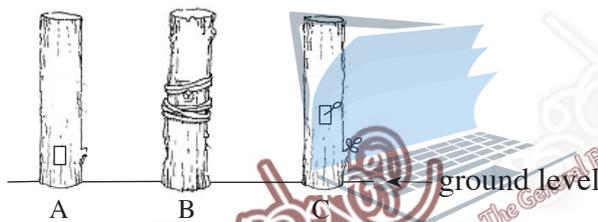


Figure	Faulty Condition
A	
B	
C	

(D) It is important to use quality seeds for planting.

(i) List four benefits could obtain by planting quality seeds.

- a
- b
- c
- d

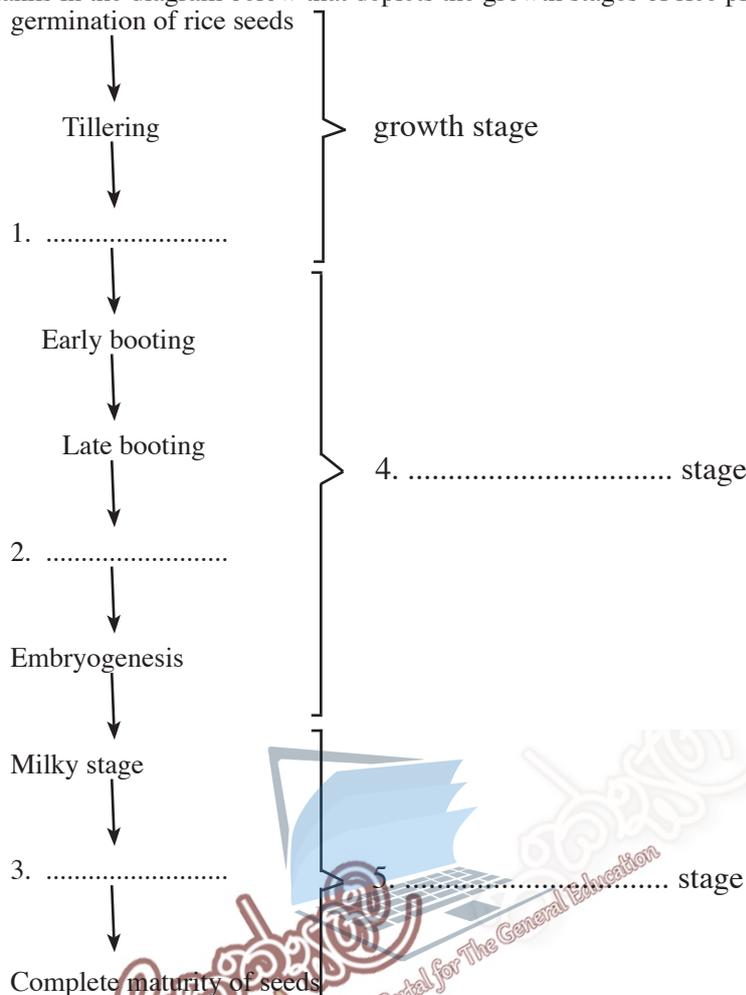
(ii) A student obtained following data from a seed sample to calculate the percentage of pure seeds

Total weight of the seed sample	=	500 g
Weight of seeds with disease symptoms	=	5 g
Weight of weed seeds	=	5 g
Weight of empty seeds, empty spikelets and dust	=	2 g
Weight of the seeds broken more than half	=	3 g

a. Calculate the percentage pure seeds in the given sample.

.....

E. Fill in the blanks in the diagram below that depicts the growth stages of rice plant.



F. A student who planted several chilli plants, did following adjustments.

- (1) Removed the shoot tip of one plant.
- (2) The shoot tip was removed and placed an agar block without auxins on the cut surface of the second plant.
- (3) In the third plant, agar block containing auxins was placed on the cut surface of the plant.
- (4) Another plant kept intact.

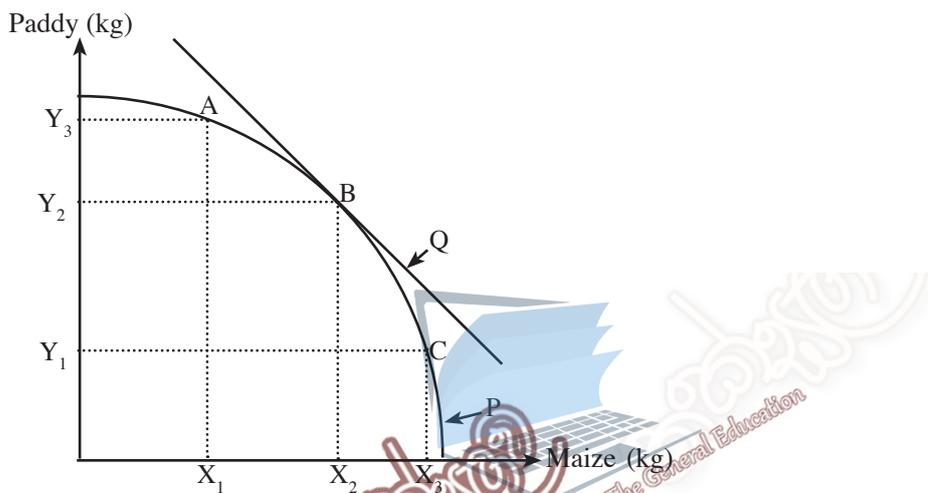
(i) State the possible observations in plants numbered as 1, 2 3 and 4 and the reasons for those observations.

Number	Treatment / Plant	Observation	Reason
1.	The Plant in which removed shoot tip
2.	The Plant in which the agar block without auxin is kept on the cut surface
3.	The Plant in which the agar block with auxin is kept on the cut surface.
4.	The plant kept intact.

03. A. Mark (✓) in the brackets if the given statement is correct and (×) if it is incorrect.

- a). Gene banks and botanical gardens are the places of ex-situ conservation. ()
- b). New plants can be produced by selection based on variation occurred due to environmental factors. ()
- c). The parent plants used for crossbreeding may be heterogeneous to the expected character. ()
- d). The hybrid vigour of seeds is weakened when hybrid seeds are used for hybridization continuously. ()
- e). Bigger fruits can be obtained by planting seeds of triploid plants. ()

(B) A farmer grows rice and maize in a same land.



(i) (a) Name the curves labeled as P and Q

P -
 Q -

(b) What is indicated by the margin of curve P?

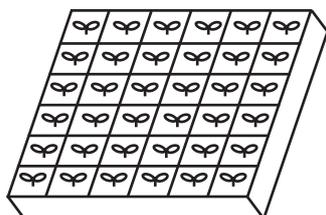
(ii) (a) State the point where the maximum profit can be obtained.

(b) State the optimum amounts of paddy and maize produced at this point.

Paddy -
 Maize -

(iii) What is the production relationship indicated in these curves?

(C) The figure below shows a nursery method used to obtain seedlings.



(i) What is the name of this nursery method?

.....

(ii) Name two materials used to prepare the nursery medium.

(a)

(b)

(iii) State two benefits you would expect by using this method.

(a)

(b)

(D) Based on the external characters mentioned in the table, complete the blanks appear under the insect order, mouth parts at adult stage and example columns.

External characters of the insect	Insect order	Mouth parts at adult stage	Example for an insect
A - Adult possesses two pairs of wings. Front wings hardened to form elytra	1.	Chewing and biting	2.
B - Adults possesses pair of membranous wings. The hind pair of wings is modified as holders	3.	4.	melonfly
C - Possesses pair of big scaly wings. probostis present	5.	6.	Citrus butterfly
D - Front and rear pairs of wings are connected by a line of hooks	Hymenoptera	7.	8.
E - Present semi - hardened front wings. possesses characteristic odder	9.	Piercing and sucking	10.

(E) Protected houses are used to produce crops for export markets and supermarkets in Sri Lanka. Soilless culture is a popular cultivation method in protected agriculture.

(i) List three reasons for higher yields in protected agriculture.

a

b

c

(ii) Two farmers in Colombo and Nuware Eliya plan to grow anthurium and roses for export, respectively. Name a suitable type of protected house for each cultivation.

Crop	Type of suitable protected house
1. Anthurium	-
2. Rose	-

(iii) State three crops suitable to grow in vertical grow bags ?

a.

b.

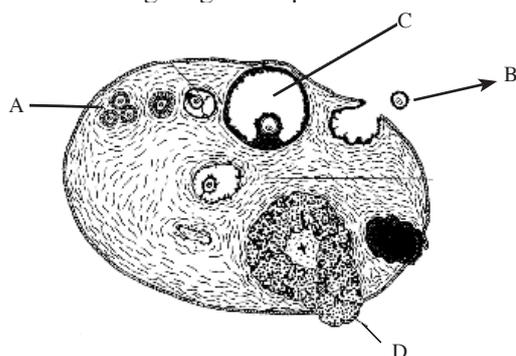
c.

(iv) What is the most suitable method to fertigate vertical grow bags?

.....

.....

04. (A) The following diagram depicts the structure of an ovary of the reproductive system of cow.



(i) Name parts denoted as A, B, C and D in the diagram.

- A -
- B -
- C -
- D -

(ii) Name the hormone secreted by D and it's main function.

- Hormone -
- Function -

(iii) State two hormones responsible for ovulation.

- a.
- b.

(B) Silage and hay are conserved animal feeds.

(i) State the most suitable stage to harvest grasses to produce quality silage.

.....

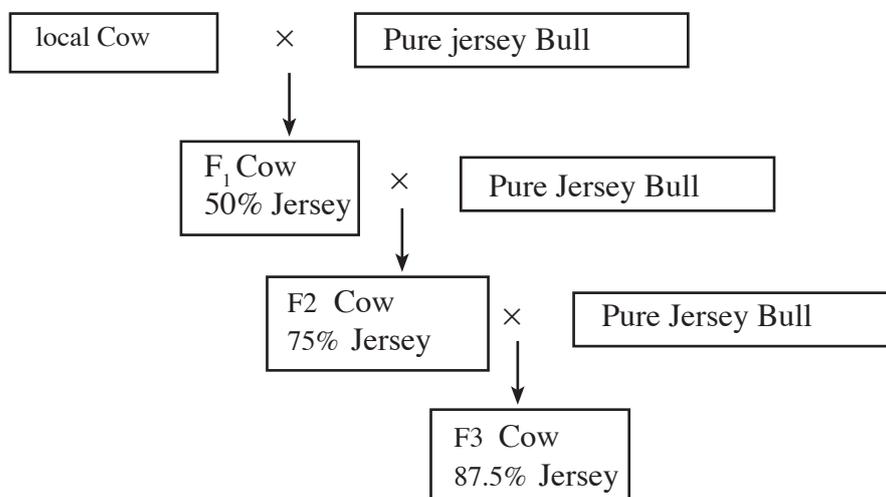
(ii) Name a condition should prevail in a silo for the silage making process.

.....

(iii) State the type of microorganisms to produce quality silage and the chemical compound should be present in the final product.

- Type of microorganism -
- Chemical compound -

(C) The breeding program shown in the following diagram was adopted in a farm to increase the milk production in the existing local cows



(i) Name the above breeding programme.

.....

(ii) State two advantages of this breeding programme.

a.

b.

(iii) Show by a sketch the probability of receiving a female calf from crossing the local cow and the pure bred Jersey bull in the farm.

(iv) How many generations are required to improve Jersey blood level up to 87.5%?

.....

(D) Protein is an essential component of main diets consumed by humans.

(i) State two functions performed by proteins within the human body.

a.

b.

(ii) What is the biological value of a protein?

.....

(iii) State the reason for low biological value in plant proteins.

.....

(E) Health safety of foods is protected by using suitable packing material for packing.

(i) Name the most suitable types of polythene to pack the food products indicated below.

Food Product	Type of Polythene
(a) Fresh fruits and vegetables
(b) Bakery products (buns, bread)
(c) Biscuits and snacks
(d) Cool drinks and mineral water

**

G.C.E. (A.L.) Support Seminar - 2015

Agricultural Science II

Part B - Essay

- * *Answer only four questions. The marks allocated for each question is 15.*
- * *Use clearly labeled diagrams in necessary places.*

1.
 - (i) Describe the factors influenced for the present level of agricultural development in Sri Lanka.
 - (ii) Describe how plants are produced by using air layering and wedge grafting techniques.
 - (iii) Describe the protein digestion process in the digestive system of fowl.
2.
 - (i) Describe the fertilizer application methods used in crop cultivations.
 - (ii) Describe the importance of soil aeration.
 - (iii) Describe the steps of a laboratory experiment used for identification of soil nematodes.
3.
 - (i) Describe the self seed production process for vegetable crops.
 - (ii) Describe the salient features of the marketing process of agricultural products.
 - (iii) Describe how the field capacity of a soil sample is determined.
4.
 - (i) "Agroforestry is a conservation farming system" Explain this statement.
 - (ii) Describe how a rational consumer reach the consumer equilibrium by using the indifference curve.
 - (iii) Describe how the agriculture sector would be used for mitigating climate change.
5.
 - (i) Describe how an insect pest would reach the epidemic level.
 - (ii) Describe the procedures that would be used to minimize the damages during harvesting of mango.
 - (iii) Describe the milk let down process of a cow.
6.
 - (i) Describe the functions of lipids in the human body.
 - (ii) Describe the importance of soil chemical properties for crop cultivation.
 - (iii) Describe the strategies that would be used to increase the photosynthesis efficiency in crops.
