

4.16 AGRICULTURE (443)

4.16.1 Agriculture Paper 1 (443/1)

SECTION A (30 marks)

1.	<ul style="list-style-type: none"> - Maximize utilization of plant nutrients; - Controls erosion through cover cropping; - Nitrogen fixation when leguminous crops are involved - Smothers weeds; - Diversification; - Improves soil structure; 	4 x <input type="checkbox"/>	(2 marks)
2.	<ul style="list-style-type: none"> - Low capital investment; - Large pieces of land; - Low labour required; - Low levels of management; - Utilizes marginal area; - Low production per unit area 	4 x <input type="checkbox"/>	(2 marks)
3.	<ul style="list-style-type: none"> - Use of herbicides; - Uprooting/slashing; - Use of cash crops; - Limiting cultivation to the point planting; - Proper timing of cultivation; - Mulching; 	4 x <input type="checkbox"/>	(2 marks)
4.	<ul style="list-style-type: none"> - Destroys soil organic matter; - Kills soil living organisms; - Destroys soil moisture; - Destroys soil structure; - Destroys plant nutrients; - Causes mineral imbalances through ash accumulation; 	4 x <input type="checkbox"/>	(2 marks)
5.	<ul style="list-style-type: none"> - Participation in ASK shows; - Involvement in agricultural projects at club level; - Participation in young farmers clubs; - Participation in animal rallies; - Involvement in seminars and workshops related to agriculture; - Participating in national tree planting activities; - Participation in national ploughing contests; - Participation in exchange programmes; 	4 x <input type="checkbox"/>	(2 marks)
6.	<p>Perfect market:- Is where a buyer can purchase from any seller and vice versa.</p> <p>Imperfect market:- Is where some buyers and sellers are not aware of prices offered by other sellers;</p>	1 x 1	(1 mark)

7.	<ul style="list-style-type: none"> - Leguminous shrubs are included to fix nitrogen into the soil; - Maximizes utilization of available land; - Controls soil erosion; - Suppresses weeds; - Provides green manure; - Source of fodder for livestock; 	4 x <input type="checkbox"/>	(2 marks)
8.	<ul style="list-style-type: none"> - Establishment; - Cutting back; - Management during dry season; - Choice of appropriate tree species; - Protection; - Weeding; - Fertilizer application; 	4 x <input type="checkbox"/>	(2 marks)
9.	<p>(a) Is the growing of different types of crops or crops of different families on the same piece of land in an orderly sequence;</p> <p>(b) Removal of extra or unwanted parts of a plant;</p> <p>(c) Is the uprooting and destruction of plants infected by disease to prevent spread of the disease to healthy plants;</p>		(1 mark)
			(1 mark)
10.	<ul style="list-style-type: none"> - Soil moisture content; - Size of planting material; - Soil type; - Type of germination; 	4 x <input type="checkbox"/>	(2 marks)
11.	<ul style="list-style-type: none"> - Requires high seed rate; - Difficult to carry out crop management practices; - Operations cannot be mechanized; - Difficult to establish plant population; - Uneven crop establishment; 	4 x <input type="checkbox"/>	(2 marks)
12.	<ul style="list-style-type: none"> - Near a reliable water source; - Well drained area with deep fertile soils; - Gently sloping area; - Secure area; - Sheltered area; . - Should not have been used for the same crop species in the previous season; 	4 x <input type="checkbox"/>	(2 marks)
13.	<ul style="list-style-type: none"> - Monopoly; - Oligopoly; - Monopsony; - Perfect market; 	4 x <input type="checkbox"/>	(2 marks)
14.	<p>(a) Irish potatoes;</p> <p>(b) Pyrethrum;</p> <p>(c) Pineapple;</p> <p>(d) Sisal;</p>	4 x <input type="checkbox"/>	(2 marks)

15.	<ul style="list-style-type: none"> - Free from pests, weed and diseases; - Has high germination percentage; - Is clean; - High yielding; - Adapted to local ecological conditions; 	4 x □	(2 marks)
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SECTION B (20 marks)

16. (a)	E – Weir;		(1mark)
(b)	<ul style="list-style-type: none"> - Water levels regulated; - Controls flooding; - Stores large volume of water; - Can be used to generate HEP; 	2 x 1	(2 marks)
(c)	<ul style="list-style-type: none"> - Desilting; - Remove trees and bushes from wall to prevent cracks and water seepage; - Repairing broken/worn out parts; 	2 x 1	(2 marks)
17(a)	<ul style="list-style-type: none"> - Maize – $4\,000 \times 40 = 160\,000$ - Cabbages – $2\,800 \times 60 = 168\,000$ - Beans – $3\,000 \times 80 = 240\,000$; <p>The farmer should grow beans;</p>	2 x 1	(2 marks)
(b)	(i) Cabbages ($168,000/=$);		(1 mark)
	(ii) Is the best alternative forgone;		(1 mark)
(c)	Resources are limited while possible enterprises are unlimited;		(1 mark)
18.	(a) (i) Phosphorus;		(1 mark)
	(ii) Calcium;		(1 mark)
	(iii) Calcium;		(1 mark)
	(b) -Nitrate ions (NO_3^-); -Ammonium ions (NH_4^+);	2 x 1	(2 marks)

19.	<p>60 kg N 20 kg P₂O₅ 30 kg K₂O Land size = 10 ha</p> <p>i) Urea = 46kgN – 100kg Urea; = 60 x100/46 x 10 ha; = 1,304.305 kg of urea;</p> <p>ii) SSP (20% P₂O₅) 20 kgN – 100kg Urea =20 x100/20 x 10 ha = 1000 kg of SSP;</p> <p>iii) Muriate of Potash (50% K₂O) 50 kg K₂O – 100kg Muriate Potash =30 x100/50 x 10 ha = 60 kg/ha = 60 x 10 = 600 Muriate of Potash; 5 x1</p>	(5 mark)
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SECTION C (40 marks)

20 (a)	<ul style="list-style-type: none"> - Uses of dams; - Use of weirs; - Use of ponds; - Roof catchment; - Wells; - Rock catchment; - Micro catchments; - Retention ditches. 	8 x 1	(8 marks)
(b)	<ul style="list-style-type: none"> - Transmit diseases; - Feed on whole or parts of plants; - Injure plants providing entry for secondary infection agents; - Suck blood from animals causing anemia; - Act on plant and animal remains to form humus; - Some cause diseases; - Some kill and feed other animals; - Some bring out cross pollination; - Some fix nitrogen into the soil; - Increases cost of product through control measures; 	9 x 1	(9 marks)
(c)	<ul style="list-style-type: none"> - Plant the crop in the field; - Allow the crop to grow up to the flowering stage; - Plough the crop into the soil; - Allow the crop to decompose before planting; 	3 x 1	(3 marks)

21 (a)	<ul style="list-style-type: none"> - Transmit crop diseases; - Feed on whole or parts of plants; - Some unearth planted seeds; - Deprive the plant of food sucking sap; - Lower the quality of flowers, fruits and berries; - Eat growing points of plants causing retarded growth; - Feed on whole or parts of seeds and lower germination percentage; - Lower the yield expected; - Cause wilting of plants by feeding on the roots; - Reduce the surface area for photosynthesis by feeding on leaves; - Chemical pest control measures affect the environment; <p>7 x 1</p>	(7 marks)
(b)	<ul style="list-style-type: none"> - Read and follow manufacturer's instructions; - Wear protective clothing; - Avoid inhaling the herbicide/not spraying against the wind/wearing breathing masks/not smoking. - Avoid eating before bathing; - Bath thoroughly after handling herbicides; - Avoid blowing – sucking blocked nozzles; - Avoid herbicide drift to unintended crops and plants; - Avoid contamination of animal feeds and water; - Left, overs and empty containers should be properly disposed and not thrown in gardens bushes or pastures; - Equipment used should not be washed in water sources used by animals and humans; - Store the chemicals safely out of reach of children and away from food; - Thoroughly wash the equipment used; <p>8 x 1</p>	(8 marks)
(c)	<ul style="list-style-type: none"> - Ripe cherries are picked by hand; - Harvested cherries are spread on mats and sorted to remove unripe, diseased, dry and damaged berries; - The diseased and overripe cherries are taken to factories as grade II; - Good quality cherries are taken to the factory as grade I; - Unripe, dry and undersized cherries are dried at home to form <i>Buñi</i> which is taken to the factory at the end of harvesting season; <p style="text-align: right;">5 x 1</p>	(5 marks)
22. (a)	<ul style="list-style-type: none"> - High moisture content; - Low dry matter content; - Low crude protein yield; - Low digestible nutrients; - Leads to gradual weakening of the stand; <p style="text-align: right;">5 x 1</p>	(5 marks)

(b)	<ul style="list-style-type: none"> - Thinning; - Weeding; - Top dressing; - Pest control; - Disease control. 	5 x 1 (5 marks)
(c)	<ul style="list-style-type: none"> - Lacks incentive for land development; - Low yields due to overstocking; - Poor stock breeding programmes; - Difficult to control pests, parasites and diseases; - Soil erosion is common; - Lowers the carrying capacity of the land; 	5 x 1 (5 marks)
(d)	<ul style="list-style-type: none"> - Quantity required varies with the level of production in a given time; - Are added to fixed inputs for production; - Cost value depends on the quantity used; - They are allocated to specific enterprises; - Their cost value is used to calculate the gross margin of the enterprise; 	5 x 1 (5 marks)