

5.8.1 Agriculture Paper 1 (443/1)

SECTION A (30 marks)

1.	<ul style="list-style-type: none"> - Used to service foreign debts. - To finance imports. - To finance government projects <p>2 x ½</p>	(1 mark)
2.	<ul style="list-style-type: none"> - Prolonged maturity - Cracking of fruits before maturity - Blossom end rot - Too much vegetative growth <p>4 x ½</p>	(2 marks)
3.	<ul style="list-style-type: none"> - Leads to loss of soil moisture - Destroys soil organisms - Destroys soil organic matter - Exposes soil to agents of soil erosion - Volatilizes soil mineral compounds <ul style="list-style-type: none"> - Accumulates ash which alters soil pH and mineral availability <p>4 x ½</p>	(2 marks)
4.	<ul style="list-style-type: none"> - Controlling soil erosion - Fencing water sources - Controlled use of agricultural chemicals - Safe disposal of effluents from farms - Establishment of vegetation along riverbanks - IPM practices - Use of non-chemical methods of pest control <p>4 x ½</p>	(2 marks)
5.	<ul style="list-style-type: none"> - Production resources are limited while production needs are many (unlimited) with many competing enterprises. Therefore, a farmer has to make a choice on which enterprise(s) amongst many to use the limited resources. <p>2 x 1</p>	(2 marks)
6.	<ul style="list-style-type: none"> - The total yield per unit area is low. - A lot of time is wasted when the farmer is shifting and building new structures. - Farmers have no incentives to develop land and conserve water and soil. - Not applicable in areas of high population density or where there is a high population increase. - Practiced where land is abundant. <p>4 x ½</p>	(2 marks)

7.	<ul style="list-style-type: none"> - Sunken nursery - Raised nursery - Vegetable crop nursery - Tree nursery - Vegetative propagation nursery - Container nursery 	4 x ½	(2 marks)
8. (a)	The process of moving water from the point of storage or source to where it will be used or stored.	1 x 1	(1 mark)
(b)	<ul style="list-style-type: none"> - piping - use of canals - use of containers 	2 x ½	(1 mark)
9. (a)	Land tenure reform is any organized action designed to improve land use and ownership.	1 x 1	(1 mark)
(b)	<ul style="list-style-type: none"> - Can be used to secure credit facilities. - Ensures security of tenure. - Encourages investment in long term and permanent projects. - Owners of land can lease all or part of land to get income - Reduces land grabbing - Reduces land disputes 	4 x ½	(2 marks)
10.	<ul style="list-style-type: none"> - Slump/slip - Debris slides - Rock fall - Rock slides - Debris fall 	4 x ½	(2 marks)
11.	<ul style="list-style-type: none"> - High production per unit area - Use of improved technology - Diversification/mixed farming - Low capital investment - Surplus produced can be sold for an income - Enhances food security at household and national level 	4 x ½	(2 marks)
12.	<ul style="list-style-type: none"> - High initial capital is required. - Requires high skilled labour. - More labour intensive. - Diseases can be easily spread. 	4 x ½	(2 marks)
13.	<ul style="list-style-type: none"> - To distribute available forage throughout the year. - To maximize the utilization of available land. - To provide feed for the dry season. - Excess forage can be sold. 	4 x ½	(2 marks)

14.	<ul style="list-style-type: none"> - Maintains soil structure - Conserves soil moisture - Reduces land preparation costs - Maintains soil cover/reduces exposure to agents of soil erosion - Reduce disturbance of roots - Reduce exposure of humus 	4 x 1	(4 marks)
15.	<ul style="list-style-type: none"> - invoice - receipt - delivery note - purchase order - statement of accounts 	4 x ½	(2 marks)

SECTION B (20 marks)

16.	<p>(a) F – Black jack (<i>Bidens pilosa</i>) G – Stinging nettle (<i>Urtica massaica</i>)</p> <p>(b) E – Poisonous to livestock F – Contaminates wool and fur</p> <p>(c) G – It irritates farm workers.</p>	<p>2 x 1</p> <p>2 x 1</p> <p>1 x 1</p>	(5 marks)
17.(a)	<p>(i) Urea (46%N)</p> $= \frac{120 \times 100 \text{ kg urea.}}{46} = 260.87 \text{ kg Urea}$ <p>(ii) Single super phosphate (20% P₂O₅)</p> $= \frac{60 \times 100 \text{ kg SSP}}{20} = 300 \text{ kg SSP}$ <p>(iii) Potassium chloride (50%K₂O)</p> $= \frac{80 \times 100}{50} \text{ kg KCL} = 160 \text{ kg KCL}$	4 x 1	(4 marks)
(b)	<p>Fertilizer ratio refers to the proportion of the three primary macronutrients in a fertilizer, e.g. NPK (10:10:10). Fertilizer grade indicates the amount of each nutrient contained in a fertilizer, e.g. urea (46%N)</p>	1 x 1	

18.	<p>Plant population</p> $= \frac{\text{Area of land}}{\text{spacing}};$ $= \frac{(36 \times 200) \text{ m}^2}{(0.3 \times 0.15) \text{ m}^2}$ $= \frac{7200}{0.045};$ <p>= 160,000 plants;</p>	5 x 1	<p>For more visit: eazyarabic.com</p> <p>(5 marks)</p>
19. (a)	Tree seedling transplanting/tree planting.	1 x 1	
(b)	(I) To allow the growth of roots in the planted hole.	1 x 1	
	(IV) To plant the seedling at the same depth it was in the sleeve.	1 x 1	
(c)	To facilitate mixing of top soil with manure for filling the planted holes.	1 x 1	
(d)	<ul style="list-style-type: none"> - Should allow light penetration. - Materials used should be strong - should allow space for growth - should not allow animals to penetrate 	1 x 1	(5 marks)

SECTION C (40 marks)

20(a)	<ul style="list-style-type: none"> - Medical facilities - Housing - Security - Rewarding good workers - Better remuneration - Transport provision - Protective clothing/uniform - Bonus - Safe working environment - Provide recreational facilities - Provide social amenities - Mechanisation/good working tools 	7 x 1	(7 marks)
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(b)	<p>(i) Blossom – end appears rotten; water soaked; dry; 1 x 1 (1 mark)</p> <p>(ii) - Too much nitrogen in early growth stages - Irregular or infrequent watering - Calcium deficiency 3 x 1 (3 marks)</p> <p>(iii) -Regular watering - Top dressing the crop with the right amount of nitrogen - Application of calcium compound fertilizers in the soil 3 x 1 (3 marks)</p>	
(c)	<ul style="list-style-type: none"> - Threshing: Removal of beans from pods by beating with sticks - Drying: Beans plants are are spread on mats to dry in the sun. - Cleaning: To remove foreign materials before storage by winnowing. - Sorting: by separating bad seeds from good ones - Dusting: by applying chemical powders on seeds to prevent attack by storage pests. - Grading: by classifying according to size and quality of seeds - Packaging: Beans are placed into containers for storage. <p>6 x 1 (6 marks)</p>	
21. (a)	<p>https://kcserevision.com/membership-join/</p> <ul style="list-style-type: none"> - Slow growth rate of crops as the process of photosynthesis is slowed. - High incidence of disease infection to crops, e.g. CBD, hot and cold disease of coffee. - Quality of crops, e.g. tea and pyrethrum is improved. - Quality of some fruits is lowered <p>2 x 1 (2 marks)</p>	
(b)	<ul style="list-style-type: none"> - Rainfall reliability: This determines the time of land preparation and planting. - Amount of rainfall is the quantity of rain that falls in a given area within a given area within a given year. Determines the type of crops to be grown and livestock to keep. - Rainfall distribution is the number of wet months in a year. Influences choice of crop varieties to grow. - Rainfall intensity: This is the amount of rain that falls in an area within a period of one hour. Rainfall of high intensity damages crops and causes soil erosion. <p>4 x 2 (8 marks)</p>	

(c)	<ul style="list-style-type: none"> - Aerial layering/marcotting: Bark and cambial layer are removed from a section of the branch, moist rotting medium is heaped around the section and wrapped with a polythene sheet; - Tip layering: Shoot with a terminal bud is bent to the ground and covered with a layer of moist soil; - Trench layering: A branch is bent, laid in a trench and held in position using pegs; and covered with a layer of moist soil; - Compound/serpentine layering: a branch is bent several times and held using pegs. Bent parts are covered with a layer of moist soil; - Shoot or mound layering: soil is heaped around the base of the stem which gives rise to new shoots; 	<p>5 x 1</p> <p>(5 marks)</p>
(d)	<ul style="list-style-type: none"> - Regulate and control of production, grading and marketing of the specific products. - Licensing production and export. - Quality control - Carrying research on different aspects of the crop or livestock in question on behalf of the government. - Acting as the sole agents on all matters concerning the crop or livestock. - Processing and marketing of processed products. - Advising the Minister for Agriculture on the importation or exportation of the products in relation to their availability. - Provide and co-ordinate and corporation different sectors. 	<p>5 x 1</p> <p>(5 marks)</p>
22. (a)	<p>(i) - Rice fields are levelled; and bunds constructed around them for controlling water level;</p> <ul style="list-style-type: none"> - Tractor drawn rotavators are used to prepare flooded fields; - Digging with jembe is also used to prepare before the fields are flooded; <p>(ii) - Water level in the field is increased from 5cm at planting time gradually to 15cm when seedlings are fully grown.</p> <ul style="list-style-type: none"> - Water is allowed to flow slowly in the fields. - Where flow is not possible, old water should be drained and fresh water added every 2 – 3 weeks. <p>(iii) - Weeds are controlled by flooding.</p> <ul style="list-style-type: none"> - Surviving weeds are controlled by uprooting. - Effective herbicides can also be used. 	<p>3 x 1</p> <p>(3 marks)</p> <p>3 x 1</p> <p>(3 marks)</p> <p>2 x 1</p> <p>(2 marks)</p>

(b)	<p>(i) - Clearing of land; - Primary cultivation; - Secondary cultivation; to fine tilth <div style="text-align: right;">4 x ½</div></p> <p>(ii) Planting of millet - Early; planting by broadcasting/row planting at 30x33 cm spacing <div style="text-align: right;">2 x 1</div></p> <p>(iii) Harvesting of millet - Individual heads are cut using knives; - The heads are dried. - The dry heads are threshed and winnowed. <div style="text-align: right;">3 x 1</div></p>	<p>(2 marks)</p> <p>(2 marks)</p> <p>(3 marks)</p>
(c)	<ul style="list-style-type: none"> - The slope of land: faster movement of material occur in steep slopes than in gentle low plains. - The nature of material: where massive rocks overlie weak underlying rocks mass wasting occur easily. - Climate: heavy rainy periods encourage mass wasting. Areas with high rainfall have wet materials that move easily. - Vegetation cover: mass wasting occurs easily and faster in bare ground than covered one. - Human activities: Deforestation, building, quarrying and cultivation are among human activities that interfere with stability of surface layers; which may initiate mass wasting. - Forces within the earth's crust: Earth tremors and volcanic eruptions cause widespread movements which in turn causes mass wasting. <div style="text-align: right;">5 x 1</div>	<p>(5 marks)</p>