

5.8 AGRICULTURE (443)

5.8.1 Agriculture Paper 1 (443/1)

SECTION A (30 marks)

1.	<ul style="list-style-type: none"> - Rainfall intensity - Rainfall distribution/pattern - Rainfall amount - Rainfall reliability 	4 x ½	(2 marks)
2.	<ul style="list-style-type: none"> - The type of crop to be grown - Type of implement used - Soil moisture content - Presence of hard pans - Presence of underground obstacles - Type of soil 	4 x ½	(2 marks)
3.	<ul style="list-style-type: none"> - Feed material eaten by the Animal - Species of the Animal - Type of bedding material/litter used - Method of storage - Age of the farm yard manure - Age of the Animal which produces the waste materials - Type of animal 	4 x ½	(2 marks)
4.	<ul style="list-style-type: none"> - Per capita income - Gross domestic product - Gross national product - Household firm relationship - Natural resource endowment 	2 x ½	(1 mark)
5.	<ul style="list-style-type: none"> - Shifting cultivation - Inheritance of land - Population pressure leading to purchase of small scattered pieces. - Accumulation of land holdings by money lenders due to debtors failing to pay - Settlement and resettlement 	4 x ½	(2 marks)
6.	<ul style="list-style-type: none"> - Muster roll - Labour utilization analysis 	2 x ½	(1 mark)
7.	<ul style="list-style-type: none"> - Storage pests - Field pests - Biting and chewing pests - Piercing and sucking pests - Rodents - Insect pests - Scientific classification - Stage of development - Stage of growth of the crop attacked 	4 x ½	(2 marks)
8.	<ul style="list-style-type: none"> - Ten people 	½	(½ mark)

9.	<ul style="list-style-type: none"> - Salaries of permanent workers - Insurance - Rent - Standing charges of telephone - Depreciation cost of farm machinery - Cost of buying machinery 	2 x ½	(1 mark)
10.	It is the physical relationship between resource inputs and the corresponding output/product	1 x 1	(1 mark)
11.	<ul style="list-style-type: none"> - Fast growth rates - Deep rooted - Nitrogen fixing - Good in by product production - Leafy - Highly branched - Hardy 	3 x ½	(1½marks)
12.	<ul style="list-style-type: none"> - Serena - Dobbs - Intama - Humid - Lulu 	2 x ½	(1 mark)
13.	<ul style="list-style-type: none"> - Source of food - Source of employment - Provision of raw materials for industries - Provide market for industrial goods - Source of income 	4 x ½	(2 marks)
14.	<ul style="list-style-type: none"> - It kills soil micro-organisms - Leads to loss of nutrients - Destroys soil organic matter - Leads to accumulation of ash that changes soil pH - Destroys soil moisture - Destroys soil structure 	2 x ½	(1 mark)
15.	<ul style="list-style-type: none"> - Prevents splash crosion/intercepts rain drops - Reduces speed of surface run offs - Reduces evaporation - Increases water holding capacity - Improves water infiltration 	4 x ½	(2 marks)

16.	<ul style="list-style-type: none"> - Records help to compare the performance of different enterprises within a farm or other farms. - They show the history of the farm. - Guide a farmer in planning and budgeting of farm operations - Help to detect losses or theft on the farm. - Help in the assessment of income tax to avoid over or under taxation - Help to determine the value of farm or to determine the assets and liabilities of the farm. - Make it easy to share the profits and losses in partnerships - Help in settling disputes among heirs to the estate when a farmer dies without leaving a will. - Record help to show whether the farm business is making profits or losses. - Help in insurance claims - Provide labour information - Help farmers to access credit 	4x½	(2 marks)
17.	<ul style="list-style-type: none"> - Movement/shifting when soil loses its fertility - Practiced where land is plenty - Practicable with annual crops not with perennials - Agricultural output is low - Inputs such as pesticides, fungicides are rarely used - Simple hand tools are used - Land communally owned - Population is sparse - Low number of livestock per unit area 	4x½	(2 marks)
18.	<ul style="list-style-type: none"> - As the price of a commodity increases the quantity offered for sale increases and as the price of commodity falls the quantity supplied declines. 	1x1	(1 mark)
19.	<ul style="list-style-type: none"> - Conserve moisture - Improve soil structure - Control soil erosion - Contribute plant nutrients/organic matter 	4x½	(2 marks)
20.	<ul style="list-style-type: none"> - Is a combination of chemical, physical, biological and cultural pest control methods. 	1x1	(1 mark)

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SECTION

21.	<p>a) American bollworm (1 mark)</p> <p>b)</p> <ul style="list-style-type: none"> - Reduces the quality of produce by boring holes on fruits - Increase the cost of production by purchase of pesticide <p>2x1</p> <p>c)</p> <ul style="list-style-type: none"> - Early planting - Field hygiene/Removal and destruction of affected crop residues - Plant Mexican marigold in the field - Destruction of alternate host - Close season - Crop rotation - Intercropping <p>2 x 1 (5 marks)</p>	
22.	<p>a) Nut grass/sedge/<i>Cyperus rotundus</i> (1 mark)</p> <p>b)</p> <ul style="list-style-type: none"> - It has underground nuts which regenerate. - Produces many seeds to enhance survival chances <p>2x1</p> <p>c)</p> <ul style="list-style-type: none"> -Competes for nutrients with crops greatly reducing yield -Increases production costs -Reduces quality of pastures/can damage the teeth of livestock -Blocks irrigation channels <p>2x1 (5 marks)</p>	
23.	<p>a)</p> <ul style="list-style-type: none"> M – Prismatic structure N – Platy structure P – Granular structure <p>3x1</p> <p>b)</p> <ul style="list-style-type: none"> N – Clay soil Q – Sandy soil <p>2x1 (5 marks)</p>	
24.	<p>a) Earthing up; 1x1</p> <p>b)</p> <ul style="list-style-type: none"> Groundnuts; Potatoes; Irish potatoes; Sweet potatoes; Maize; Sorghum; Tobacco; Carrots; <p>2x1</p> <p>c)</p> <ul style="list-style-type: none"> - To improve tuber formation in Irish/sweet potato - To encourage/improve seed formation in groundnuts - To improve drainage and provide support in tobacco - To provide support/prevent lodging in cereal crops like maize - To prevent greening in root/ tuber crops; <p>2 x 1 (5 marks)</p>	

SECTION C (40 marks)

<p>25.</p>	<p>(a) - Adaptability – should be adapted to local ecological conditions - Physical deformities/damages – should be free from physical deformities/damages - Should be free from pests/diseases - Viability/high germination percentage – should have high viability/ germination percentage - Should be from high yielding/healthy plant early maturing - Purity; should be clean/free from impurities - Maturity; should be of correct maturity stage - Age/storage period; seeds stored for long periods have low viability/germination percentage hence should not be selected - Size of seeds; seeds should be of correct size</p>	<p>7 x 1 (7 marks)</p>
	<p>(b)</p> <ul style="list-style-type: none"> - Ensures adequate supply of water to the crop - Production/growing of vegetables is done throughout the year - Controls pests in crop production - Maximizes the utilization of available resources - Increases yields and ensure a steady supply of food throughout the year - Ensures a steady and reliable source of income and employment 	<p>4 x 1 (4 marks)</p>
	<p>(c)</p> <ul style="list-style-type: none"> - Date of the transaction - Type of goods - Quantity of goods - Price of goods - Total amount of money involved - Invoice number - Terms of payment - Name of supplier - Signature/stamp of supplier 	<p>4 x 1 (4 marks)</p>
	<p>(d)</p> <ul style="list-style-type: none"> - Calcium acetate strengthens plant cell wall - Calcium is necessary in protein synthesis - Promotes soil aggregate formation thus improving soil aeration, water infiltration and retention - Calcium compounds when added to acidic soils they raise soil pH - Increases cation exchange capacity - Makes phosphorus and potassium available for plant uptake. - Controls blossom end rot in tomatoes; 	<p>5x1 (5 marks)</p>

26.	<p>a) – Harvest at the correct age 13 – 22 months for plant crop/12 – 18 months for ratoon crop</p> <ul style="list-style-type: none"> - Take sugarcane sample for testing to determine maturity - Cut the mature cane at the base/near the ground - Cut off the green tops - Strip off green leaves/using machete/burn before harvesting - Deliver the cane to the factory within 48 hours/ immediately after cutting 	5x1 (5 marks)
	<p>b) – Stage of growth at harvesting time- cut when 50% has flowered</p> <ul style="list-style-type: none"> - Species of the forage crop used- rich in nutrients - Duration of storage- long storage lowers the quality - Weather conditions during drying- dry and sunny conditions produce high quality hay - Length of drying period- rapid drying produces high quality - Pest/disease attack on the crop- free from diseases - Method of storage- store in a dry place under shade 	4x1 (4 marks)
	<p>c) – Short term planning/making quick decisions in order to carry on the activities in appropriate time and hence avoid a crisis</p> <ul style="list-style-type: none"> - Long term planning/making decisions which are linked to the future plans and operations on the farm - Gathering and analyzing information related to the enterprises - Detecting weaknesses and constraints and finding ways and means of overcoming them. - Keeping farm records or accounts - Guiding and supervising the farm management - Bearing consequences/responsibility of plans/decisions - Making predictions of the likely outcome of possible alternative courses of action - Comparing ones enterprise with the set standards 	7x1 (7 marks)
	<p>d)</p> <ul style="list-style-type: none"> - Open ditches – U shaped, V-shaped, trapezoidal ditches are dug for excess water to flow away by gravity - Underground drain pipes/perforated pipes are laid underground, excess water then seeps from the surrounding area into the pipes and flows to a water way - French drains – ditches are dug, filled with stones and gravel and then covered with soil. Excess water from the surrounding area seeps into these drains and is carried away. - Cambered beds – Raised beds are constructed to allow excess water to flow away in furrows. - Pumping – is draining excess water from the swampy area using mechanical force. - Planting of trees – e.g. Eucalyptus absorbs a lot of water from swampy areas. 	5x1 (5 marks)

27.	<p>a) (i) – land preparation</p> <ul style="list-style-type: none"> - Clear the bush/using a panga/slasher - Remove stump - Primary cultivation is done using jembe/ploughs - Secondary cultivation/harrow to a fine tilth - Avoid manure application to prevent forking <p>b)</p> <ul style="list-style-type: none"> - Make drills 30cm apart and 1cm deep - Apply phosphates/DSP/DAP/MAP fertilizer during planting - Sow seeds along the drills - Cover with top soil - Apply fertilizer at the rate of 90kg of DSP/DAP - Plant at the onset of rains/when the soil has enough moisture - Firm the soil after planting; 	4x1 (4 marks)
	<p>c)</p> <ul style="list-style-type: none"> - Grass cover reduces the speed of run off which lowers the erosive power of run off - Grass cover reduces/intercepts the impact of rain drops which reduces splash erosion - Grass cover protects soil surface hence reducing wind erosion - Grass cover holds soil particles together from being carried away by erosive agents - The grass improves soil structure - Grass cover improve infiltration rate of water - Grass cover reduces the rate of evaporation of soil moisture. - Grass filters trap soil 	6x1 (6 marks)
	<p>d)</p> <ul style="list-style-type: none"> - Mulching – A light mulch is applied on the nursery bed before seedlings emerge to conserve moisture and control erosion - Watering – nursery bed is watered regularly in the morning and evening to ensure adequate water supply. - Weed control- weeds are removed through uprooting to minimize competition with the crop - Pricking out- overcrowded seedlings are removed and planted in a second nursery bed/seedling bed - Shading – A light shade is erected over the nursery bed to protect young seedlings from excess sunlight/ rain drops that damage them. - Pest and disease control - controlled through application of appropriate chemical/fungicides - Hardening off – is gradual reduction of shade and watering 1 – 2 weeks before transplanting seedlings to acclimatize them to seed bed conditions - Root trimming- cut at the tips to encourage lateral root development - Application of foliar feed fertilizer to boost growth - Removal of mulch after emergence to prevent etiolation 	7x1 (7 marks)