MACADITA
Uganda Certificate of Education, 2026
Biology (Theory), 553/1 Drafted Scoring Guide

Item 1	Expected responses
a	**Mono-cropping**; reduced nutrient availability (caused nutrient exhaustion) in the soil limiting vegetative establishment. **Water logging**; reduced air circulation in the soil; reduced aerobic respiration and uptake of mineral salts causing stunted growth. **Curled & reduced leaf size**; reduced surface area for trapping sunlight needed for photosynthesis **Developed yellow patches**; less amount of sunlight trapped reducing rate of photosynthesis
b.	✓ **Plants regained the green colour**; absorbed more sunlight energy and increased rate of photosynthesis. ✓ **Developed many branches** from the buds; increasing the SA for trapping sunlight energy needed for photosynthesis. ✓ **Developed many leaves** from buds; increasing the SA for trapping sunlight energy needed for photosynthesis OR d**eveloped many leaves** from buds; increasing the SA for exchange of gases needed for respiration. ✓ **Water disappeared;** increased air circulation allowing aerobic respiration needed for uptake of mineral salts
Item 2	**Expected responses**
a	Swallowing tablets caused irritation and stimulated sensory cells of the throat / stomach to generate an impulse; the sensory neuron transmit the impulse from the sensory neuron to relay neuron; the relay neuron transmit the impulses to the motor neuron; the motor neuron transmit the impulses to the effector muscles of the vomiting center in the medulla of the brain; which cause the diaphragm and stomach muscles to contract causing the vomiting (contents of the stomach are forced upwards and expelled through the mouth).

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b	✓ Avoid the bad mates; who lead her into trouble / to reduce passive smoking ✓ Avoid use of drugs to avoid intake of toxins and have balanced blood pressure. ✓ Feed regularly on balanced diet (rich on proteins / and vitamin C) for nutritional support (increase on the body size / and increase body immunity). ✓ Take enough water (rehydration) to ensure hydrated system. ✓ Conduct regular physical activity to improve blood supply to brain cells. ✓ Should go for HIV counseling and guidance learn how to live with the diseases ✓ HIV treatment for treatment the virus
Item 3	**Expected responses**
a	Pale skin colour is determined by a recessive mutant gene. Both Ritah and Peter were carriers for the albinism condition. Let A represent allele for normal skin colour Let a represent allele for affected skin colour Parental phenotype; Normal skin X Normal skin Parental genotype; Aa X Aa Meiosis Gametes; A a A a Random fertilization; F_1 genotypes; AA Aa Aa aa F_1 phenotype; Normal Normal Normal Albino Both parents were carriers for albinism condition; each contributed an allele to the offspring thus producing an albino child.
b	i) ✓ She is 15 years old with immature reproductive system that affect baby growth in the womb ✓ Poor feeding; that limit fetal growth and development ✓ Drinking alcohol; that interfere with supply of nutrients and oxygen to the fetus ✓ No antenatal services; affecting proper care and support to the growing fetus

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	ii) ✓ Learn the proper care of children with albinism for health living ✓ Help children in the selection of partners to avoid producing children with albinism in the future. ✓ Significant in the identification of the paternity (father) hence resolving conflicts

Section B (Part 1)

Item 4	Expected responses
a	✓ **Reduced soil productivity;** due to over cultivation that cause nutrient exhaustion. ✓ **Increased temperature;** due to overgrazing that produces a lot of GHG that affects the ozone layer increasing global warming / due to use of wood for fuel reducing the carbon sinks increasing the carbon dioxide gas in the atmosphere ✓ **Biodiversity loss;** due to clearing of the green cover to create human settlement areas, destroying habitats for organisms causing biodiversity loss. ✓ **Increased soil erosion;** due to overgrazing that removes the soil cover, leave the soil bear for rapid water flow
b	✓ Adopt safe family planning methods to have a controlled population. ✓ Adopt use of organic fertilizers to improve on soil productivity; ✓ Restore the green cover to recreate the habitat for organisms to reduce biodiversity loss. ✓ Controlled animal crazing / adopt the paddock system to reduce soil erosion and its effects. ✓ Afforestation and re-afforestation to replace the cut trees for wood fuel. ✓ Use biogas / electricity / charcoal briquettes to reduce biodiversity loss. ✓ Train / support communities on sustainable use of natural resources to ensure sustainable use of the resources
Item 5	**Expected responses**
a	✓ Increased use of agrochemicals, **decreases water quality slightly;** due excessive use / surface run off in water or destruction of the buffer zones that filters water. ✓ Increased use of agrochemicals, **increased health risk gradually;** due to inhalation of the agrochemical toxins/ feeding on the contaminated fish and rice that contain toxins ✓ Increased use of agrochemicals, **decreases fish catch gradually;** because of increased fish poisoning that affects fish fertility and growth. ✓

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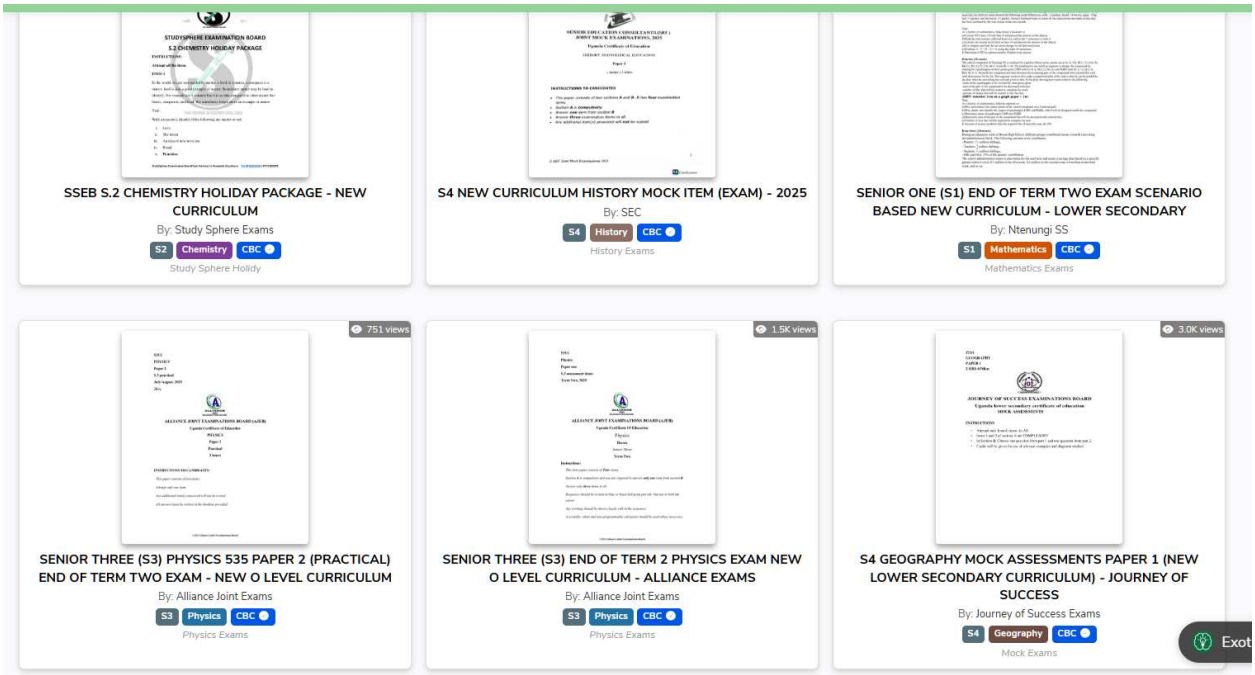
b	✓ Use only the **recommended amount of chemicals** to reduce wastage and spill over that affect water ✓ Use **environmental friendly chemicals** (organic chemicals), which are biodegradable reducing bioaccumulation effects ✓ **Sensitization campaigns** on the effects of excessive use of agrochemicals on man and nature. ✓ Follow **policy guidelines** on the use of agrochemicals to minimise their effects ✓ Adopt use of **organic chemicals** over the non-organic chemicals, which are biodegradable. ✓ Appropriate use of **protective gears** wherever in use of agrochemicals to minimise inhalation of toxins ✓ **Create / restore strong buffer zones** (wetlands) to filter the water before reaching the lake
Item 6 **a**	**<u>Part II</u>** **<u>Mother</u>** ✓ Pregnant and breast feeding; increases the body demands for nutrients and energy increasing tiredness ✓ Heavy physical farm work; require a lot of energy making her feel tired and cause weight loss. ✓ Drinks little water; making her body dehydrated and poor circulation of nutrients causing dizziness ✓ Eats a meal rich in carbohydrate only; cause malnutrition and limit body growth / size **<u>Toddler</u>** ✓ Toddler feeds on only breast milk / refused to eat complementary food; that is no longer enough for body demands. ✓ Lack of enough of proteins in the diet; causing stunted growth and reddish hair ✓ Poor feeding by the mother; provide limited quality and quantity of nutrients causing stunted growth
b	***Advice for proper care for the mother*** ✓ Take enough rest / reduce farm work; ✓ Rehydrate the body; to improve circulation of nutrients ✓ Take food rich in proteins for pregnancy growth / vitamins to boost immunity/ food rich in

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	iron for blood formation; ✓ Attend antenatal services; for proper pregnancy management. ***Advice for proper care for the toddler*** ✓ Feed the child on food rich in proteins; to enhance body growth ✓ Rich in vitamin C; to improve the body immunity ✓ Continue breastfeeding to support growth of the toddler
Item 7 **a (i)**	✓ **Smoking cigarettes;** deposited the cigarette smoke onto the alveoli limiting oxygen circulation that cause muscle pain ✓ **Drinking alcohol;** affected liver functions / metabolic functioning or causing body weakness ✓ **Smoking cigarettes and drinking alcohol;** lowered the body immunity making it hard to fight the virus.
(ii)	**Blood condition** ✓ **External bleeding;** reduced blood volume and limit the ✓ **Reduced blood pressure;** Less supply of essential nutrients and drugs to the significant organs ✓ **Reduced blood volume;** limit the circulation of drugs and food nutrients around the body.
b	**<u>Preventive measures by family members</u>** ✓ Avoid direct contact with the patient's body fluids; to avoid the infection ✓ Wash hands regularly with soap / sanitizer to kill off the virus ✓ Wear protective gears like gloves /face masks to limit contact with the virus. ✓ Don't share the personal items like clothes to minimise the infection ✓ Isolate the patient and limit the unnecessary contacts to reduce the possible infection. ✓ Monitor the family members on the possible signs and symptoms for early support and care

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