JINJA JOINT EXAMINATIONS BOARD
Uganda Advanced Certificate of Education.
MOCK EXAMINATIONS – AUGUST, 2023
PROPOSED MARKING GUIDE

P515/1 AGRICULTURE

SECTION A (30 MARKS)

1. C	11. A	21. A
2. B	12. D	22. C
3. A	13. A	23. A
4. A	14. A	24. D
5. B	15. B	25. B
6. B	16. B	26. A
7. D	17. B	27. C
8. C	18. A	28. A
9. C	19. D	29. D
10. B	20. D	30. B

Award 1 mark for 30

1x30=30marks

31. (a) **Dearth period** refers to a period of the year when there is no or little nectar and pollen to the bees.

Award 2 marks for 1 correct definition

1x1= 01 mark

(b) **Causes of the following conditions in apiculture.**

(i) **Dearth period**

- ✓ Prolonged drought which does not allow flowering
- ✓ Very heavy rain which prevent bees from foraging
- ✓ Persistent pest infestation
- ✓ Over harvesting during the harvesting season.

Award 1 mark for 3 points

1x3=3 marks

(ii) **Drifting**

- ✓ Placing hives facing the same direction
- ✓ Painting hives with the same colour
- ✓ Strong blowing wind around the hive
- ✓ Placing hives near each other.

Award 1 mark for 3 points

1x3 =3 marks

(c) **Advantages of using a top bar hive in bee keeping**

- ✓ It is cheap to extract honey without expensive equipment
- ✓ High quality honey is harvested without disturbing the brood comb
- ✓ Bee keepers can easily carry out inspection of the brood combs
- ✓ It can be made from relatively cheap local materials
- ✓ It is durable and can last longer than other hives
- ✓ It can be suspended by wire loops to avoid attack by aunts, termites
- ✓ It can be placed where the population of livestock and human is high with minimum, risk of attack

Award 1 mark for 3 points

1x3=3 marks

32. (a) **Benefits of using tiles over other roofing materials**

- ✓ They are easy to fit/ fix onto the roofing frame work
- ✓ They are heavy thus reducing chances of being lifted by wind, strong rainfall.
- ✓ When well fitted, they are adequately water proof
- ✓ Tiles offer sound thermal insulation properties.
- ✓ They are long lasting than other roofing materials eg thatch
- ✓ They require low maintenance costs once, they are well installed on the good roofing frame work.

Award 1 mark for 5 points

1x5=5 marks

(b) **Qualities of a good foundation of a building**

- ✓ Should be deep enough to give more stability to the structure

- ✓ Should be well re-in forced to resist forces of tensile, compression etc from damaging the building
- ✓ Should be well drained to prevent moisture from weakening the wall
- ✓ Should be large enough to avoid sinking of the building.
- ✓ Should be made of strong materials to support the dead load of the upper structure
- ✓ Should have a damp proof coarse to prevent water from rising up the wall

Award 1 mark for 5 points

1x5=5 marks

33. (a) **Gender gap**: is a specific job/ tasks assigned to either men or women in agricultural production

Award 2 marks for 1

1x2= 2 marks

(b) **Roles of women in agricultural production.**

- ✓ Planting of seeds
- ✓ Harvesting of produce
- ✓ Transporting of produce from the garden to home
- ✓ Cultivating of land
- ✓ Weeding of crops especially broad casted crops such as millet
- ✓ Caring for small ruminant animals e.g. goat

Award 1 mark for 4 points

1x4=4 marks

(c) **Ways of increasing women's participation in agricultural production**

- ✓ Ensuring equal access to land for production.
- ✓ Provision of credit facilities to women to buy inputs
- ✓ Educating women on the production technique
- ✓ Formation of co-operatives for collective bargaining of women when selling their produce
- ✓ Harmonize agricultural policies to fit both men and women.
- ✓ Training more women extensive workers to train women farmers on production techniques.

Award 1 mark for 4 points

1x4=4 marks

34. **(a) Benefits of grasses in a grass legume mixture**

- ✓ Increase total herbage production
- ✓ Ensures stability of production/ provide herbage early after the dry season.
- ✓ Increase the energy valve of the pasture
- ✓ Perennial grasses maintain dense vegetation cover that reduce chances of weed infestation

Award 1 mark for 3 points

1x3=3marks

(b) **Ways of reducing losses during silage making**

- ✓ Addition of additives to increase the nutrient content of the silage
- ✓ Proper wilting of the materials to reduce the possibilities of rotting due to high moisture content
- ✓ Proper harvesting and chopping of material
- ✓ Faster covering of the materials when the soil has been opened to reduce spoilage due to external conditions
- ✓ Proper compaction of the materials to exclude oxygen

Award 1 mark for 3points

1x3=3 marks

(c) **Ways a farmer can promote animal welfare**

- ✓ Good transportation of animals under good health care service for animal treatment
- ✓ Proper training of animals for high power out put
- ✓ Good treatment without causing fear, pain or stress.
- ✓ Good feeding of animals / providing water to animals for survival
- ✓ Proper research and education about animal improvement
- ✓ Ensuring proper shelter against unfavorable environment
- ✓ By using good balanced knowledge professional judgment with good ethical and society values

✓ **Award 1 mark for 4 points**

1x4=4 marks

35. **(a)Functions of roots in plants**

- ✓ Some are used as penetrating organs
- ✓ Some roots are modified for breathing
- ✓ Some roots are used for food storage
- ✓ Some roots aid in nitrogen fixation eg legume roots

- ✓ They absorb water and mineral sects from the soil
- ✓ They provide support/ anchorage to plants.

Award 1 mark for 4points

1x4=4 marks

(b) **Ways in which plant leaves are adapted to their function**

- ✓ Some leaves have scales for protection especially to the axillary buds/ reduced into thorns for protection.
- ✓ Some have buds on leaf margins for vegetation propagation
- ✓ Some have thick lamina for food and water storage
- ✓ Some have leaf tendrils to enable the plant climb for support
- ✓ Possession of stomata for gaseous exchange and transpiration.
- ✓ Some have thin and flattened lamina to reduce diffusion gradient to photosynthesis cells
- ✓ They have large air space in spongy mesophyll to create enough diffusion gradient for efficient gaseous exchange
- ✓ Some have shiny waxy cuticle to reduce water loss by transpiration/ hairly lamina to reduce water loss by transpiration
- ✓ Have a rich network of veins containing vascular tissues for efficient transport of products and raw materials foe photosynthesis

Award 1 mark for 6 points

1x6=6 marks

36. (a) **Variable cost; refers to the costs which change with the level of production.**

Award 2 marks for 1 correct definition

1x2=2 marks

(b)

Fixed factor (land)	Quantity of fertilizer applied	Total maize yield(output)	Marginal product
1	1	8	8
1	2	18	10e
1	3	30	12e
1	4	38	08e
1	5	44	06e
1	6	48	04e
1	7	48	00e
1	8	46	-2e

1	9	42	-4e

½ x 8=4 marks

(c) **Reasons why it is important to assess efficiency standards of the farm**

- ✓ Helps the farmer in future planning on running and management of the farm
- ✓ It enables the farmer to compare the performance of his technique with those of other neighboring farms undertaking the same production / enterprises
- ✓ Enable the farmer to know how best to combine factors of production in order to maximize profits
- ✓ It enables the farmer to find out whether the enterprises are making profits or losses

Award 1 mark for 3points

1x3=3 marks

37. (a) **Ways in which living organisms contribute to soil formation**

- ✓ Plants die, decompose to form humus
- ✓ Lichens inject chemical substances in rocks that weaken the rock
- ✓ Some micro- organisms decay dead matter to form humus
- ✓ Animals die, decompose to form humus
- ✓ Burrowing animals break rocks to form soil
- ✓ Human activities like quarrying, road construction etc break down rocks to form soil
- ✓ Plant roots extend and break the parent rock to form soil
- ✓ Animals trumple on rock surface break it and form soil.
- ✓ Plant roots secrete/release chemical substances that break down rocks to soil.
- ✓ Living organism respire to produce carbonic acid which break down rocks
- ✓ Some plant parts die, rot to form soil
- ✓ Animals wastes decompose to form soil
- ✓ Termites feed on dead matters to form humus

Award 1 mark for 5points

1x5=5 marks

(b) **Factors that influence the amount of organic matter in the soil.**

- ✓ **Topography**; low lying areas have more organic matter due to deposition.
- ✓ **Over cultivation**; reduce organic matter in the soil
- ✓ **Minimum tillage;** maintains organic matter content in the soil

- ✓ **Amount of rainfall**; places with high rainfall amounts have more vegetation and therefore high organic matter
- ✓ **Soil type**, sandy soils have less organic matter compare to clay soils.
- ✓ **Presence of living organisms in the soil,** soils with population of organisms have high organic matter
- ✓ **Addition of manure**; increase soil organic matter
- ✓ Irrigation increase plant growth leading to more organic matter in the soil
- ✓ **Temperature** ; high temperature increase the rate of decomposition of organic matter leading to reduction of organic matter in the soil
- ✓ **Amount of water in the soil**, in saturated soils, organic matter decomposition is slow hence a large amount of organic matter
- ✓ **Vegetation of the area**; places with desire vegetation have more soil organic matter
- ✓ **Bush burning**; reduces the amount of organic matter in the soil

Award 1 mark for 5points

1x5=5 marks

END