JINJA JOINT EXAMINATION BOARD

MOCK EXAMINATIONS 2022

UGANDA ADVANCED CERTIFICATE OF EDUCATION

PRINCIPLES AND PRACTICES OF AGRICULTURE

P515/1 PAPER 1

MARKING GUIDE

SECTION A (30MARKS)

1	B	11	B	21	C
2	C12	A 22	B		
3	B	13	D	23	C
4	D	14	D	24	C
5A 15	A	25	D		
6	A	16	A	26	C
7	A	17	C	27	A
8	B18	B		28	B
9	A19	B29	A		
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31. (a) Importance of calcium in plant nutrition

- ✓ Influences availability of other nutrients like phosphorous
- ✓ It is essential for growth of meristem root hairs and root tips
- ✓ It is important in root development
- ✓ It affects the hardeness of cell membrane
- ✓ It raise soil PH
- ✓ Improves on plant vigour and stiffness of the stem

Award 1 mark for 5 points

1x5 = 5marks

(b) How can favourable PH for crop growth be maintained

- ✓ Through application of agricultural lime to the soil to neutralize acidic soils.
- ✓ Draining land to control water logging.
- ✓ Regular addition of organic matter to control leaching and to replace nutrients taken up by plants.
- ✓ Applying acidic fertilizer were PH is high. (reject fertilizer only)
- ✓ Irrigation of sand soil to dilute acidity.

Award 1 mark for 5 points

1x5= 5 marks

32. (a) **Ecosystem**; this is a biotic and biotic interaction within a system/ living and non living interaction in a system.

Award 2 marks for 1 definition

2x1= 2marks

(b) Food web,

This is because it has a network of interconnected food chains.

(c) Food chain

This is because it has linear sequence of feeding relationships.

(d) (i) Producers

Grass and shrubs

(ii) Primary consumers

Goat, Zebra and rabbit

(iii) Decomposers

Bacteria

(e)

- ✓ The population of grass increases
- ✓ The population of lion and hyena decreases

33. (a) **Steaming up**; Is the practice of giving extra nutritious feeds to an in- calf cow two month to calving

Award 1 mark for 1 definition

1x1= 01mark

(b) Benefits of steaming up

- ✓ Control nutritional deficiency diseases for example milk fever.
- ✓ To custom the animal particularly heifers to the milking parlour stalls.

- ✓ Enables the dam to produce milk rich in colostrum.
- ✓ This practice caters for increased milk yield after calving
- ✓ Dam get into a good physiological state in preparation for calving
- ✓ Enable health growth of the foetus for meeting nutrients demand of the foetus.
- ✓ To enable the cow to produce heavy and healthier calf.
- ✓ To enable the calf cow to gain energy required for proper partition

Award 1 mark for 5 points

1x5 = 5marks

(c) Characteristics of concentrate feeds

- ✓ Feeding value is fairly constant
- ✓ They have low fibre content
- ✓ Contain low amount of water
- ✓ They have a high digestibility
- ✓ They are palatable and acceptable to animals.
- ✓ They are high in energy and proteins
- ✓ They are derived from grains and their by- products

Award 1 mark for 4 points

1x4 = 4 marks

34. (a) (i) **implicit costs**; these are costs that are not easily recognised and often forgotten in farm accounting e.g. farmers own labour.

Award 1mark for 1 point

1x1 = 01mark

(ii) **Explicit costs**; these are costs that are easy to recognise and quantify in farm accounting e .g cost of fertilizers, hired labour.

Award 1mark for 1 point

1x1 = 01mark

(iii) **Fixed costs**, these are costs that do not change with the level of production ie they persist irrespective of the level at which the farmer is producing e. g maintenance cost on building.

Award 1mark for 1 point

1x1 = 01mark

(iv)**Variable costs**; these are costs which change with the level of production e.g. amount of feeds change with the number of layers kept.

Award 1mark for 1 point

1x1 = 01mark

(b) Ways of improving efficiency of the farm

- ✓ Proper land preparation before planting
- ✓ Proper control of pests and diseases
- ✓ Proper spacing of crops during planting
- ✓ Carryout irrigation during drought to ensure proper growth of crops
- ✓ Proper record keeping on the farm.
- ✓ Use of improved animal feeds.
- ✓ Fencing of farm land.
- ✓ Timely planting of crops
- ✓ Proper feeding of animals on the farm
- ✓ Use of extension services on the farm
- ✓ Use of improved varieties of crops
- ✓ Proper supervision of farm activities
- ✓ Fertilized applications to enrich the soil with nutrients
- ✓ Proper planning of farm enterprises
- ✓ Proper housing of farm animals

Award 1 mark for 6 points

1x6 = 06 marks

35. (a) **Continous variation** is a type of variation where there is no clear cut and sharp difference among organism/plants of the same species over a given character.

While

Discontinous variation is one which shows a clear cut and sharp difference among organisms over a given character.

Award 2 marks for 1 difference

2x1= 2 marks

(b) Why plants vary from one another?

- ✓ It is due to genetic interaction and epistasis
- ✓ Selection and breeding of organism that lead to development of new characteristics in growth in plant population

- ✓ Mutation of germ cells that change the genetypic and phenotypic characteristics
- ✓ Changes in climatic conditions leading to change in phenotypic appearance.
- ✓ Due to diseases that may interfere with normal characteristics of gene leading to reduction in growth, infertility and output.
- ✓ Polygenic inheritance when two or more pairs of acleles contribute to a single phenotypic trait.

Award 1mark for 3 points
1 x 3 = 3 marks

(c) ways in which plants continue to vary in nature

- ✓ Some plants are tolerant to drought conditions while others are less tolerant
- ✓ They possess seeds of different sizes.
- ✓ They possess seeds and fruits of different colours
- ✓ They vary in taste e.g some are sweet while others are bitter.
- ✓ They possess different shape/ morphology.
- ✓ Different plants have different yields.
- ✓ Some plants have different heights from others

Award 1 mark for 3 points

1 x 3 = 3 marks

(d) How can a farmer reduce variation in plants?

- ✓ Providing uniform soil conditions
- ✓ Provide good uniform environmental conditions to all plants
- ✓ Controlled breeding in plants to promote pure lines.
- ✓ Reducing the possibility of mutations by limiting chemical application to plants.

Award 1 mark for 2 points

x2 = 2 marks.

36. (a) Defination of terms

(i) **Inclined plane**; is a slanting/ slopping edge over which load is moved.

Award 1 mark for 1 point

1x1= 1 mark

(ii) **Pulley**; isa string/ rope wounded around a rotating wheel to lift or lower load or

A pulley is a wheel with a groomed rim over which a rope or string passes.

Award 1 mark for 1 point.

1x1= 1 mark

(b) Effeciency = $\frac{M.A}{VR}$ X 100 1 mark

$\frac{80}{100} = \frac{MA}{5}$

$\frac{100MA}{100} = \frac{MA}{5}$ e ½

MA= 4 1 mark

MA = $\frac{Load}{Effect}$ 1mark

$\frac{4}{1} = \frac{2000}{E}$ $\begin{pmatrix} Force = ma \\ 200x10 \\ 2000 \end{pmatrix}$

$\frac{4E}{4}$ X $\frac{2000}{4}$ 1mark

Effort = 500N - e ½

(c) Examples of machines in second class lever

- ✓ Wheel barrow
- ✓ Spanner
- ✓ Bottle opener
- ✓ Nut cracker

Award 1 mark for 3 points
1x3 = 3 marks

37. (a) Cause of stress in birds

- ✓ Starving birds / inadequate feeding
- ✓ Presence of parasites in the poultry house
- ✓ High temperature in the poultry house
- ✓ Vaccination of birds leading to pain
- ✓ De- beaking birds which causes pain
- ✓ Change of feeding routine
- ✓ Change of feeds
- ✓ Overcrowding birds in a poultry house.
- ✓ Change of environment around birdse.g. moving birds to a new place.
- ✓ Noise of predators around the poultry house.

Award 1 mark for 5 points

1x5 = 5 marks

(b) Suggest ways a farmer may control stress in birds

- ✓ Provide enough feed and water troughs to poultry birds.
- ✓ Regular control of external parasites
- ✓ Use clean feeders and drinkers to control diseases.
- ✓ Avoid abrupt changes in daily routine and feeding.
- ✓ Provide well balanced diet to birds
- ✓ Ensure proper ventilation to avoid high temperatures.
- ✓ Ensure correct stocking rate to avoid overcrowding of birds.

Award 1 mark for 5 points

1x5 = 5marks.

END