SECTION A (30 MARKS)

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

SECTION B (70 MARKS)

31. (a) ***Explain the meaning of gross margin*** *(02marks)*

This is the total revenue minus the total variable costs per hactarage.

$$GM = \frac{TR - TV.C}{ha}$$

(b) ***Give 3 (three) ways in which the knowledge of gross margin may be utilized by the farmers.*** *(03marks)*

- Helps in proper planning.
- Helps a farmer to choose better enterprise.
- Helps a farmer to change from poor enterprise.
- Helps in allocation of resources.

(c) ***A farmer has five hectares of land on which wheat was produced. He incured the following costs during the production of 100,000kg of wheat. ploughing 50,000/=, seeds 10,000/=, weeding 70,000/=, pesticides 20,000/=, Harvesting 20,000/=, transport 10,000/=, Rent on store 20,000/=, Insurance 15,000/= and salary for workers 30,000/=. He sold each Kilogram of wheat at 1000/=***
Calculate the gross margin per hectare of wheat production (5 marks)

Calculations

Total Revenue (TR) = price x kgs
= 100,000 x 1000
= 100,000,000 /= *(01 mark)*

Total variable cost (T.V.C)

= Ploughing	50,000/=
Seeds	10,000/=
Weeding	70,000/=
Pesticides	20,000/=
Harvesting	20,000/=
Transport	10,000/=
Total	**180,000/=**

(2marks)

∴ Gross margin = TR – TV.C
100,000,000 – 180,000
= 99,755,000

(1 mark)

Gross margin per ha

$= \frac{99,755,000}{5}$

= 19,964,000/=

(1 mark)

12 *(a)* ***Explain the factors that determine the fish stocking rate.*** *(05marks)*

- Size of the pond, bigger the pond, the more amount of fish it can accommodate.
- Growth stage, bigger and large fish require more space than smaller or younger fish.
- Amount of capital available, large fish ponds require a lot of capital to buy feeds.
- The purpose of the fish kept, those for feeding other animals may be over stocked.
- Fertility of the pond.
- Availability of the feeds for the fish.
- Breed of fish.
- Level of water in pond.
- Predation in the pond.
- Health status of fish.

Marks should be girm to any 5well explained points.

(Any 5 x 1= 5marks)

(b) ***Mention the management practices necessary to maintain the fish pond.*** *(05marks)*

- Clearing shrubs / bushes around the pond.
- Planting grass around the ponds.
- Adding organic manure to the pond water.
- Feeding / ponding with good quality feeds.
- Controlling predators.
- Weeding the pond.
- Cutting big trees around.
- Application of dewormers to control fish worms.
- Rising banks / trenches to avoid flooding.
- Desilting to remove mud / silt.
- Draining out water and replacing with fresh water.

(Any 5x1 = 5marks)

33. (a) ***Define the term Gender*** (02mark

Is the state of being either a man or woman and their correct responsibility in a society or community? (02 mark

(b) ***Explain how the sex ratio in the population can affect agricultural production.*** (02marks

If the ratio of man is more than women, agricultural production will increase and vice versa (Any 02 marks

(c) ***Suggest factors that influence the productivity of women in agricultural production.*** (06marks

- Age of the woman.
- Physiological status
- Health of women.
- Attitude of women.
- Level of education.
- Cultural beliefs.
- Level of income.
- Land ownership.
- Accessibility to credits
- Nature of work.
- Type of implement used.
- Working conditions.

34. (a) ***Explain the factors that favour the abundance of living organisms in the soil.*** ***(04marks)***

- Organic matter : more organic matter in the soil increases the numbers because it acts as food for them.
- Temperature : increase in temperature reduces the number.
- Soil PH : different organisms survive under different P.H i.e more fungal are common in a cedic soil.
- Aeration : more air in soil increases the number because they require oxygen.
- Soil depth
- Moisture content of the soil
- Predation
- Type of crop grown.
- Soil nutrients.
- Pollution.
- Tillage practices.

(Any 6 well explained 6x1= 6 marks)

(b) Give the desirable effects of soil living organisms. **(04marks)**

- Make holes in soil and improve soil aeration.
- Bacteria help to fix Nitrogen into the soil.
- Helps in soil formation.
- Decompose organic matter.
- Die and decompose to form soil.
- Helps in binding soil particles together.

(Any 4x1 = 4 marks)

35. (a) *Explain the post-harvest practices handling of mushrooms* *(04mark)*

- Processing to add value and increase life span.
- Proper drying to reduce moisture content.
- Proper packaging to reduce contamination.
- Proper storage to increase life span.
- Sorting and grading to set price.
- Branding for easy identification.
- Sorting & grading to set price.
- Proper clearing.

Marks should be given to well explained points. *(4 x1)= 4 marks*

(b) *What challenges are faced by mushrooms growers in Uganda.* *(06marks)*

- Labour intensive.
- Lack of good quality spawn.
- Limited knowledge and skills.
- Perishability of mushrooms.
- Poor storage facilities .
- Lack of ready market.
- Lack of good quality substrates.
- Fungal diseases.

(6x1 = 6 marks)

36. (a) *Differentiate between inclined plane and a pulley as used in simple machines.* *(02marks)*

A pulley is a string or rope wounded around a rotating wheel to lift or lower load.
Or.
A pulley is a wheel with a grooved rim over which a rope or string passes.

(Any 1 for 1 point)

Inclined plane, is the slanting /sloping edge over which load is moved.

(1x1 mk)

(b) *Give four examples of second class levers.* *(02marks)*

- Wheel barrow
- Spanner
- Bottle opener
- Nut cracker

(c) *A crane lifts 600 kg through a vertical height of 12 m in 18 seconds.*

(i) *What weight is the crane lifting?* *(02 marks)*

$w = M \times g$
$= 600 \times 10$ **Reject answer in Kgs**
$w = 6000\ N$

(ii) *What is the cranes useful power output?* *(02 marks)*

$$\text{Power Out Put} = \frac{\text{work done}}{\text{Time}}$$

$$= \frac{6000 \times 12}{18}$$ **Reject answer without units**

Power = 4000 watts

(2 marks)

(iii) If the motor has an efficiency of 80%, what is the power in put?

(02 marks)

$$= \text{Effeciency} = \frac{\text{Output}}{\text{Input}}$$

$$\frac{80}{100} = \frac{4000}{input}$$ **1 mark for formular**

$$\text{Input} = \frac{4000}{0.8}$$ **1 mark for answer.**

= 5000 watts

(2 marks)

37. (a) Describe how the rubber ring elastrator machine is used to castrate a calf.

(05marks)

- Restrain the calf to be castrated.
- Put a rubber ring on an elastrator machine.
- Stretch the rubber using elastrator.
- Arrange and push the scrotum through the rubber ring.
- Release the rubber ring at the neck of the scrotum release the calf and leave it for about 7 days.
- Within 7 days the scrotum will shrink and drop off with testacles.

A word 1 mark for the correct logical order.

(5x1 mark @ point =5 marks)

(b) Give reasons why castration is a recommended practice in animal management.

(05marks)

- Reduce in breeding
- Reduce breeding diseases/ inheritable diseases.
- Improves on quality of wool in sleep.
- Makes animals suitable for work.
- Makes animals docile and easy to handle.
- Prevents bad odour in male animals.
- Improve on meat (promote high quality meat)
- Maintain correct ratio of male to females.
- Increase growth rate of male animals.
- Maintain correct ratio of male to female.
- Increase growth rate of male animals.

(Any 5 points @ 1 mark)

END