AGRICULTURE
FORM FOUR
TERM 3 2025
OPENER EXAMINATION
TIME: 1 ¼ HOURS

INSTRUCTIONS: ***Answer all the Questions*** **TIME: 1 HR 15 MIN**

1. Give three reasons why calves should be housed singly. (1 ½ mks)
   - **To prevent spread of parasites**
   - **To prevent spread of skin infections**
   - **To prevent calves from licking one another which may lead to formation of hair balls in the rumen.**
2. State four post milking practices. (2mks)
   - **Weighing the milk**
   - **Cleaning milking utensils**
   - **Cleaning milk parlour**
   - **Storing and cooling milk**
   - **Treat dipping**
   - **Apply milking jelly**
3. State three signs of heat observed in rabbits. (1 ½ mks)
   - **Due throws herself on its side**
   - **Frequent urination**
   - **Vulva turns red and swells**
   - **Doe becomes restless**
   - **Peeping other rabbit hutches**
4. Study the table below and fill in the words. (3mks)

Description	Cattle	Pig	Poultry
Young from birth/ hatching to weaning	**Calf**	**Piglet**	Chick
Young female before parturition/ layering	**Heifer**	Gilt	**Pullet**
Mature male for breeding	Bull	**Boar**	**Cock**

5. State five differences between ruminants and non-ruminates. (5mks)

Ruminants	**Non-ruminants**
1. Chew curd	**Doesn't chew curd**
2. 4 stomach	**One stomach**
3. Regurgitate from	**Do nit regurgitate**
4. No ptyalin in saliva	**Have ptyalin in the saliva**
5. Most digestion and absorption takes place in rumen	**Most digestive and absorption takes place the small intestines**
6. Alkaline saliva	**Neutral saliva**
7. Can digest cellulose	**Cannot digest cellulose**

6. A ration containing 18% protein is to be made from maize and sunflower cake. Given that the maize contains 7% protein and sunflower cake contains 34% protein, use the Pearson square method to calculate the value of feedstuff to be used to prepare 100kg of the foodstuff.

Maize 7% — **16 parts of maize**

18

Sunflower 34% — **11 parts of sunflower**

Maize = $\frac{16}{27}$ x 100 = 59kg

Sunflower = $\frac{11}{27}$ x 100 = 41kg

b) Apart from the person square method name another method that can be used to formulate feed ratio.(1mk)

Trial and error

7. State three sources of capital for starting agricultural activity. (1 ½ mks)

- **Saving**
- **Inheritance**
- **Grant**
- **Credit**

8. State four measures of National economic development of a country. (2mks)

- **Gross domestic product**
- **Gross National product**
- **Gross National income**
- **Per capita income**

9. Study the table below showing quantities of fertilizer used and yield of maize obtained over a period of 8 years and answer the questions that follow.

Land L	DAP fertilizer (in 20kg units)	Yield (90kg bags)	Marginal production (in 90kg bags)	Average production (in 90kg bags)
1	0	2	**2**	**0**
1	1	10	**8**	**10**
1	2	24	**14**	**12**
1	3	42	**18**	**14**
1	4	56	**14**	**14**
1	5	62	**6**	**12.4**
1	6	60	**-2**	**10**
1	7	56	**-4**	**8**

a) i) Fill in the marginal and average product columns in the table. (4mks)

ii) Using the graph paper provided, draw the 3 production curves in the same graph paper. (6mks)

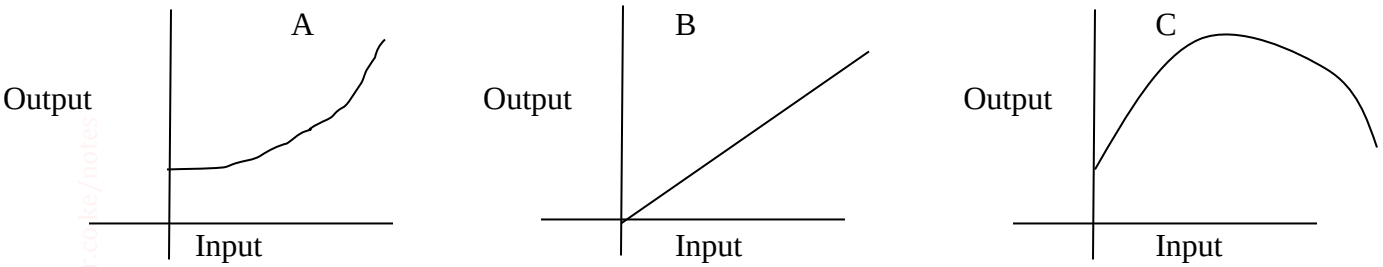
iii) Show the three zones of production on the graph. (3mks)

10. State four ways a farmer can improve labor productivity in the farm. (2mks)

- **Training**
- **Mechanization**
- **Assigning tasks according to skills**
- **Providing guidance and counseling to farm workers**
- **Motivation**

- **Improves terms and conditions**
- **Supervision**

11. The following illustration shows different production function curves in agricultureal economics. Study them and answer the questions that follow.



a) Identify the production function curves labeled A and B. (2mks)

A – **Increasing returns PF**

B – **Constant returns PF**

b) What does the law derived from the production function c state. (1mk)

If successive units of one variable input are added to fixed quantities of other inputs a point is reached when additional unit of input declines.

c) Which one of the three production curves is rare in Agriculture. (1mk)

B

d) Give a reason for your answer in question (c) above. (1mk)

- Because there are other factors of production that are limiting

12. The table below shows the population and gross domestic products of countries A and B.

Country	Gross domestic product (Million Ksh)	Population (Millions)
A	1800	36
B	1200	15

a) Calculate the per capita income for each country. Show your working. (2mks)

Per capita **income** = $\frac{\textbf{\textit{Gross Domestic Products}}}{\textbf{\textit{Population}}}$

A - $\frac{\mathbf{1800}}{\mathbf{36}}$ **= 50** **B =** $\frac{\mathbf{1200}}{\mathbf{15}}$ **= 80**

b) Which of the two countries in more developed economically? (1mk)

B

13. Describe the various risks and uncertainties in crop farming. (10 mks)

- **Function of commodity prices**
  The farmer may not predict the future market prices.
- **Ownership uncertainty – farmer may lose part or the whole of the produce through theft, change in government policy, fire, death e.t.c.**
- **Physical yield uncertainty – The farmer does not know how much to expect.**
- **Outbreak of pest and diseases – This will affect the expected outcome.**
- **Sickness and injury uncertainty – Farmer can be sick or injured thus affecting ability to work.**
- **New production techniques and uncertainty – The farmer may not be certain as to whether technology is as effective as the previous one.**
- **Obsdescence - a farmer may invest in machinery which may become outdated**
- **Natural catastrophes - Flood drought earthquakes e.t.c may destroy crops or kill animals.**