ANIMAL HUSBANDRY 2

1. GENERAL COMMENTS

The standard of this paper was good for the level of candidates involved and are comparable with previous years' papers. However, the performance of most of the candidates was not encouraging, as quite a number of them performed below average.

2. SUMMARY OF CANDIDATES' STRENGTHS

(1) Majority of the candidates answered the questions in an orderly manner. This is commendable because it made marking of scripts easier than it would have been if they had done otherwise. A good number of candidates answered different questions on different pages, as instructed on the answer booklets. This is commendable, and candidates are encouraged to keep it up.

(2) Candidates were quite impressive this year, as majority of them wrote the question numbers behind the answer booklets in the order in which they answered them.

(3) All the candidates attempted to answer at least, some of the questions, even though some of them had little or no idea on the requirements of some questions.

(4) Candidates had very little difficulties answering the following questions:

(a) ways in which diseases are of economic importance in livestock production;
(b) ways in which fencing is important in livestock farm;
(c) materials used in milking cows;
(d) animals that are fed on pellets and mash diets;
(e) aims of animal improvement programmes.

3. SUMMARY OF CANDIDATES' WEAKNESSES

(1) Some of the candidates had difficulty in understanding some questions, thus, such questions were either left unanswered, or answers provided in some cases had no linkage with the questions involved.

(2) ***Wrong spelling of essential key words*** was a major problem encountered in this paper. This caused some candidates to lose points unnecessarily; a situation which could have been avoided. In addition, it appeared some ***candidates did not devote enough time to read over their answers to questions***, to enable them rectify issues with omissions and correct wrongly spelt words. Though it is possible the candidates did not know the correct spellings of such words, it is believed that reading over the answers could have drawn their attention to words that were ***mistakenly spelt wrongly***.

(3) It was a common observation that some candidates provided more answers to some of the questions, than were expected. This has been a general practice for some time now. In addition, others answered either **five** or **all the six** questions for this paper, instead of answering **only four** as indicated in the instructions. Though the current decision is that examiners should mark all and select the best four answers out of the

total number of questions answered, candidates who do that in future might be penalized. The challenge here is that, instead of the candidates focusing and spending adequate time on only four questions, they end up answering parts of each of the six questions because of inadequate time. Remember the time allocated is just enough to answer four questions, but not six. In addition, the candidates would have limited time left to read over answers they had provided for possible correction of errors. Candidates might perform better, if they spent time focusing on four main questions they could answer best, rather than attempting all questions partially.

(4) Some of the candidates also spent so much time to answer questions, and later cancelled them out, probably because they later realized those questions were not the easiest. This is time wasting, and it could be avoided if they devote the first 5 minutes of the time allowed, to read all the questions at the start of the paper, and decision taken on which ones to attempt or otherwise, before they start work.

(5) A good number of candidates were unable to form correctly, simple sentences to make meaning to readers. Consequently, they end up bringing out expressions with different meanings from what they possibly intended to write.

(6) Though this year's questions did not involve writing of scientific names, candidates who attempted to write the scientific names of some plant species, did so without adhering to the rules of presenting scientific names, hence in most cases they were marked down.

(7) Areas that posed much problems to the candidates include:
   (a) effects of low temperature on some parameters in livestock production;
   (b) differences between hand mating, pen mating and pasture mating;
   (c) explanation of the term "dystocia";
   (d) disadvantages of deep litter system in poultry production;
   (e) explanation of the term cross breeding;
   (f) differences between hand mating, pen mating and pasture mating

4. SUGGESTED REMEDIES

(1) Candidates need to improve their reading skills, to enable them to build more vocabularies for use under examination conditions.

(2) At the start of a paper, candidates should be encouraged to ***spend about five minutes of their time*** to read and understand all the questions and decide on questions to attempt before they start work.

(3) Teachers need to emphasize the need for candidates to obey instructions during examinations. This will help them to spend good time to answer the right number of questions, rather than ***wasting time to provide additional answers*** to some questions, which would eventually not add additional scores to their work.

(4) Decision must be taken to penalize candidates who answer more questions than is expected. This would possibly serve as deterrent to such practices in future.

(5) Candidates should be advised to convince themselves on which questions they wish to answer, before tackling them. This will help minimize the excessive cancellation of answers to a whole question, after wasting time to write all those answers.

5. DETAILED COMMENTS

QUESTION 1

(a) **State four changes that take place after the chopped forage has been compressed and covered in silage preparation.**

(b) **Give two reasons for carrying out each of the following practices in pasture management:**
- (i) **weeding;**
- (ii) **controlled burning;**
- (iii) **irrigation;**
- (iv) **fertilizer application.**

(c) **State three functions of phosphorus in animal nutrition.**

(d) **Copy and complete the table below by ticking (√) the appropriate column to indicate the effect of low temperature on farm animals under the following parameters.**

Parameter	*Effect*		
	Increase	*Decrease*	*Normal*
(i) Pulse rate			
(ii) Water intake			
(iii) Grazing time			
(iv) Milk yield			
(v) Feed intake			

(a) This question did not pose much problems to most of the candidates.

Some of the candidates, however, indicated that the compressed forage would be flattened. It is common knowledge that any compressed material would be flattened, but it should be noted that it is not a change which occurs in the ensiled material.

Others indicated that the colour of the forage changes from green to brown. This is incorrect because though the colour of the forage changes, it does not change to brown, but rather to olive green. It is rather hay, that changes colour from green to brown upon drying.

The expected answers on changes that occur to forage during silage preparation include:

(i) oxygen is used up, and carbon dioxide content increases;

(ii) the temperature of the ensiled mass increases;
(iii) bacteria ferments carbohydrate to produce lactic acid, which causes pH of the medium to reduce (acidity increases);
(iv) digestibility of Nutrient Detergent Fibre (NDF) increases.

(b)

Weeding – some of the candidates who attempted this question defined weeding. However, that was not the focus of the question. Major challenges encountered here were candidates' inability to express themselves well, causing a significant change in the intended meaning of some statements. Expected answers include – to reduce competition with crops over space, air, water and nutrients. Weed control also helps minimize pest and disease spread, eases harvesting of forage, removes poisonous weeds and improves the aesthetic value of the pasture.

Controlled burning – this question posed some challenges to some candidates because it was misunderstood. Lots of the candidates were rather giving reasons for *controlling bush burning*, instead of reasons for practicing controlled burning. Consequently, they were marked down. The expected answers, however, include – to kill some parasites and their eggs, destroy old herbage, promote new growth of forage, to add potassium to the soil, controls weeds/unwanted plants, etc.

Irrigation – Some candidates said irrigation supplies water to the soil. This is more or less a definition of the term, but not a reason for carrying it out. Expected reasons for irrigating crops include – to improve nutrient uptake from the soil, to rehydrate plants, improve plant growth especially during the dry season, improve yield of herbage, etc.

Fertilizer application – most of the candidates had no challenge at all with this question. They were on point, giving reasons such as for increased nutrient content of the soil/pasture, to regulate soil pH, etc.

(c)

This question did not pose much challenge to the candidates. Those who really knew the roles of phosphorus in the body of animals, gave precise answers. Some of the expected functions of phosphorus include – for bone and teeth formation, for egg shell formation, for acid-base balance in the body, for protein synthesis and for transport of fatty acids.

(d)

This was one of the simplest questions in this paper, but only a few of the candidates had perfect scores. Candidates who got it wrong either did not know the answers to that question, or they did not understand the question. When temperature reduces, the pulse rate

of the animal increases to improve blood flow to ensure constant body temperature. Water intake of the animals, however, decreases as perspiration reduces drastically. Grazing time increases, feed intake and milk yield also increase under reduced temperature conditions. Some of the candidates *ticked all the columns in the table*, causing them to score zero for this question.

QUESTION 2

(a) **Explain each of the following mating methods in farm animals:**
   (i) **hand mating;**
   (ii) **pen mating;**
   (iii)**pasture mating.**

(b)
   (i) **Mention two advantages of each of the mating methods explained in (a).**
   (ii) **Mention two disadvantages of each of the mating methods explained in (a).**

(c) **Name two methods of collecting semen from a bull.**

(a)

(i) Hand mating – Most of the candidates had partial explanation for this term. Hand mating is a method of mating livestock whereby a female animal on heat is taken to a male animal for mating, after which the female animal is returned to its cage/area of confinement. Most of the candidates *did not indicate that the female animal is returned after mating*, hence partial marks were awarded to their explanations.

(ii) Pen mating – is a method of mating where male and female animals in an appropriate mating ratio are enclosed in a pen for purposes of mating. The challenges encountered by the candidates include their failure to indicate that the *animals are in each mating ratio*, and that any of the *males in the pen could mate any of the females* there made them score partial marks.

(iii) Pasture mating – In this section, the candidates did not have much challenge with this question. Whereas pasture mating involves free mating taking place among male and female animals during grazing, some of the candidates did not explain that any male animal has equal chances of mating any female animal they come across, hence results in indiscriminate mating. That is a key feature of this method of mating, but was not captured by the candidates, making their explanations for the term like pen mating.

(b)

(i) Over here, some candidates mentioned some advantages, but these were not unique to the system they were referring to. For instance, indicating that pen mating is not expensive, without comparing it to the pasture mating method makes that answer incorrect.

This is because pen mating could be more expensive than the pasture mating method, but not more than the hand mating method. Consequently, such candidates were either marked down, or scored partial marks in some cases.

(ii) The challenges here were like those in (2bi). The candidates were not comparing the disadvantages with other appropriate mating methods. For instance, a candidate saying pen mating is expensive may not be correct, because hand mating is more expensive, so they were expected to compare the high cost of pen mating with pasture mating for full score.

(c) Here, candidates who knew the answers had no challenges at all. Some candidates wrote "natural methods" and "artificial methods" as answers to this question. These were incorrect, because all the semen collection methods are artificial, and they were expected to indicate means of achieving that. Expected answers include use of dummy or teaser bull, use of artificial vagina, use of electro-ejaculator or the use of hand massage.

QUESTION 3

(a) State four ways in which diseases are of economic importance in animal production.

(b) Give three examples of each of the following types of parasites of farm animals:

(i) **ectoparasites;**

(ii) **endoparasites.**

(c) State five causes of low production of ruminants in West Africa.

(d)

(i) **Explain the term fodder crop.**

(ii) **Give three examples of fodder crops.**

(a)

In this question, candidates were expected to state some of the ways in which diseases of livestock affect the farmer and the economy in general. Though candidates did not face much challenges with this question, some of them were stating symptoms of diseases. Such candidates were marked down, because they were expected to rather provide responses such as reduced productivity, reduced income due to procurement of medication for treatment, reduced patronage of products due to fear of the diseases, enable discovery of new vaccines/medications, high mortality of animals resulting in total losses etc.

(b)

(i) Ecto-parasites – This question was expecting candidates to list some parasites which live on the body of livestock. It seemed some of them got confused as to which organisms were ecto parasites, and which ones were endo parasites, so they interchanged

them. In addition, some of them could not differentiate pests from parasites, so were listing pests such as tsetseflies, instead of ecto-parasites such as fleas, lice, ticks, mites, leeches, blow fly larvae, etc.

(ii) Endo-parasites – Candidates were expected to list parasites which live inside the body of the host animal. Those who really knew what was expected of them were on point. Answers expected from the candidates include tape worm, liver fluke, round worm, plasmodium, hook worm, pin worm and trypanosome.

(c) In this question, candidates were expected to indicate some of the obstacles hindering smooth production of livestock in West Africa. They had minimal challenges with this question as most of them scored full points. Some of the expected challenges were unfavourable climatic conditions such as inadequate rainfall, low technical know-how of farmers, poor livestock breeds, poor production systems, high incidence of pests and diseases, inadequate supply of high-quality feed, poor marketing systems, high rate of inbreeding, high cost of feed, among others.

(d)

(i) This question was quite challenging to most of the candidates. A lot of them were explaining the term fodder, rather than fodder crop, hence a lot of them scored partial marks for this question. Whereas *fodder* is a harvested crop which is either preserved or served to livestock in the fresh state, *fodder crop* on the other hand is an arable crop which is cultivated purposely for feeding livestock. The difference should be noted.

(ii) This did not pose much challenge to the candidates as they were right on point. The only problem was with candidates who wrote scientific names of the fodder crops but failed to abide by the rules governing writing of scientific names (not underlined, and not ensuring that the genus name starts with upper case whiles the species name starts with lower case alphabet. Examples of fodder crops include maize, millet, sorghum, ***Panicum maximum***, wheat, cowpea, cassava, etc.

QUESTION 4

(a) (i) Explain the term monogastric.

(ii) Give two examples of monogastrics.

(b) Explain each of the following terms as used in animal nutrition:

(i) concentrate;

(ii) additive.

(c) State four ways in which roughages are important in the diet of farm animals.

(d) List four materials which could be used in milking cows.

(e) Mention two animals that could be fed on each of the following forms of prepared feed:

(i) pellets;

(ii) mash.

(a)

(i) This question did not pose much challenge to those who knew it. Others rather explained ruminant livestock in place of monogastric. This was a common observation from school to school. Monogastric is a livestock with simple stomach/ single stomach or simple digestive system.

(ii) This was not a challenge to candidates who knew what monogastric animals are. Expected answers include all the poultry species (chicken, guinea fowl, turkey, ducks, quail etc), pigs, dogs, rabbits, grasscutters, etc

(b)

(i) Concentrate – this question was not answered properly by some of the candidates. It should be remembered that concentrates are animal feed which are *high in digestible nutrients* but are *low in fibre.* The two key points need to be present in the definition to make the explanation complete. Candidates who stated only one of the key points were awarded partial scores.

(ii) Additives – This also posed some challenges to the candidates. It should be borne in mind that additives are substances which are *added in small quantities* to livestock feed to provide nutrient or non-nutrient benefits to the livestock. The candidate needs to indicate that they are added in smaller quantities to differentiate them from other feed ingredients.

(c) This question wanted candidates to state some of the roles of roughages in the diets of livestock. Some of them said it improves digestibility of the feed. This is incorrect because feed with higher levels of roughage has lower digestibility, even though it improves the rate of feed movement in the GIT of the animals. It should be remembered

that faster movement of feed in the GIT does not imply higher digestibility. Expected answers include provision of bulk in animal feed, enhanced bowel movement, reduction of constipation, as a source of energy etc.

(d) This question did not pose much problems to the candidates. A lot of them gave very laudable responses to this question. Some of the expected answers include cheese cloth for filtering the milk, hand gloves, stool, restraining rope, protective clothing, milking machine, etc

(e)

(i) Pellets – There was no challenge with this question, because all livestock species can be fed with pelleted feed.

(ii) Mash – Similarly, there was no problem with this question. All livestock species except fish can be fed with mash diets.

QUESTION 5

(a) (i) Explain each of the following terms as used in animal production:
- **(i) flushing;**
- **(ii) dystocia;**
- **(iii) parturition.**

(b) State four ways in which fencing is important in livestock farm.

(c) Mention five ways in which rearing of rabbit is important.

(d) State five disadvantages of deep litter system in poultry production.

(a)

(i) Flushing – This question posed some challenges to candidates because expected key points in the explanation were missing. Flushing is the act of giving *extra nutritious feed to female animals* over a *period of 2-3 weeks* before and after mating to enhance multiple ovulation and implantation of the embryo. Most of the candidates explained the term without including the time interval/duration for the activity. That is very important to differentiate it from steaming up and creep feeding.

(ii) Dystocia – This is an abnormal birth or difficulty to give birth in farm animals. A lot of the candidates did not seem to have ever heard of the terminology, as they either left it unanswered, or the answer they provided had different meaning all together.

(iii) Parturition – This was one of the most answered questions. It was possibly the friendliest, as most of the answers were on point in their explanations. Parturition is the act of giving birth in livestock.

(b) Most of the candidates knew the answers to this question, but the way the answers were presented made them unacceptable. Candidates should bear in mind that fencing *does not stop nor prevent* theft and predators on the farm, but it *rather helps minimize* these. Remember fencing cannot stop/prevent some predators like hawk from the farm, nor prevent theft by workers on the farm. For answers to questions like these, the words "stop", and "prevent" should be avoided as much as possible.

(c) This was a good question for most students as they were on point with their responses. Rabbits are reared for income, meat, pelt, it's easier to start as less capital is required.

(d) This question appeared controversial to the candidates as a lot of them were comparing their answers against the extensive system of livestock rearing. That is inappropriate because the deep litter system is a type of intensive system, and therefore when one is considering its disadvantages, it ought to be compared with other intensive systems of production such as battery cages, *but not* with the extensive system of production.

QUESTION 6

(a) State four aims of animal improvement programs.
(b) Mention four hormones involved in reproduction in farm animals.
(c) (i) Explain the term cross breeding.
(ii) State two disadvantages of inbreeding.
(d) (i) Explain the term natural pasture.
(ii) State six problems that are associated with range lands in West Africa.

(a) This was a simple straight forward question demanding reasons behind animal improvement programmes. Candidates who knew what it was, were on point. Improvement programmes are aimed at enhancing feed conversion efficiency, obtaining disease tolerant breeds, to improve growth rates, increase litter size, reduce maturity period, reduce aggression, etc.

(b) This question demanded some hormones which play roles in reproduction in farm animals. Though candidates knew the names of some hormones, some of those listed do not play roles related to reproduction. The hormones which are involved in reproduction include Prolactin, Oestrogen, Oxytocin, Progesterone, Testosterone, Relaxin, etc. Some of those who stated the correct hormones unfortunately spelt them wrongly. These are one-word answers, and they must be spelt correctly to score.

(c)

(i) Most of the candidates knew what cross breeding was but were unable to explain it clearly. It should be noted that cross breeding involves mating of animals which belong to *different breeds* but of the *same species*. *Crossbreeding is not possible if the animals are not of the same species*, and therefore candidates were expected to indicate so.

(ii) In this question, candidates were expected to state some of the challenges associated with inbreeding. Candidates did not have much challenges with these. Some of the expected answers include transmission of chronic diseases to future generations, reduced livestock vigour, may lead to inbreeding depression, leads to decline in fertility, etc

(d)

(i) Some of the candidates explained it simply as *pastures which are natural*. This explanation is inappropriate because it repeats the key words in the question, and therefore such answers are not acceptable. Natural pastures are grazing lands which were not cultivated nor are managed with human efforts. They are natural because there is no human intervention in its management. Candidates were expected to explain the terms natural, and pastures in different words from those in the questions, to score full marks.

(ii) Similar to other questions, this one did not pose much challenges to the candidates. They were mostly on point with answers to this question. Some of the expected answers include urbanization leading to inadequate land size, wildfires destroy the forage, presence of toxic plants which cause poisoning, high incidence of diseases and pests, poor and unreliable yield of pastures, etc.

ANIMAL HUSBANDRY 3

1. GENERAL COMMENTS

The standard of the paper was comparable to that of previous years. The general performance was average. The questions set spread across the entire syllabus.

2. SUMMARY OF CANDIDATES' STRENGTHS

(1) There was systematic and logical presentation of answers by candidates.
(2) Generally, candidates did not copy the questions before answering them.
(3) Most exhibited legible handwritings.
(4) Some candidates demonstrated that they were well taught by providing innovative answers through application of knowledge.
(5) The areas that were well answered are:
  (a) farm animals that possess feathers;
  (b) importance of bone, milk and feathers to farm animals;
  (c) major feed nutrients found in cassava;
  (d) feed stuff that contains carbohydrate;
  (e) processing of feed stuff and reasons for boiling cassava tuber before feeding it to farm animals;
  (f) farm animals that could be fed with specimen G (boiled cassava);
  (g) farm animals that could be infested with specimen H (Tsetsefly) and how it can be controlled.

3. SUMMARY OF CANDIDATES' WEAKNESSES

(1) Sentences and expressions made by some candidates' lack of understanding and got their answers wrong;
(2) Spelling mistakes were common in some candidates work, especially the technical words e.g., carbonhydrate instead of carbohydrate, protain instead of protein.
(3) Some candidates provided more than one answer and this made them score nothing in the responses they provided. e.g., what is the major nutrient in cassava? Some wrote carbohydrate, protien, vitamins
(4) Some were also wasting the answer sheets by cancelling their work on every page.
(5) Areas that were poorly answered are:
  (a) preparation of bone meal;
  (b) ways of restraining farm animals and the activities that could be carried out when using rope to restrain farm animals;
  (c) sources of water and its use on the poultry farm.

4. SUGGESTED REMEDIES

(1) Teachers should recommend the appropriate text books to students.
(2) Candidates should familiarize themselves with technical terms.
(3) Candidates should adhere strictly to the rubrics.
(4) Candidates should be taken through past WASSCE questions to become familiar with what they should expect.

5. DETAILED COMMENTS

QUESTION 1

(a) **Give three ways in which each of specimens A, B and C are important to farm animals.**
(b) **Describe how specimen A could be processed into bone meal.**
(c) **Name three farm animals on which specimen C could be found.**

(i) Bone meal: - Most candidates were able to write that it supplies calcium and phosphrous to the animal when added to their feed.

- Aids in the production of red blood cells in the marrow.
- Serves as a frame work.

Only a few candidates could not answer this part well, they mentioned it provides calcium without any linkage to when fed with it. Others mentioned it produces cells without reference to the name of that particular cell.

(ii) Most of the candidate were able to mention that milk is a source of protein for growth and development and to repair worn out tissues as well as fostering orphaned young animals.

(iii) Feathers: - this part was also well answered as candidates came out with answers such as

- For brooding
- For incubating
- For keeping their body warm etc.

(b) Processing bone into bone meal: - This part was poorly answered even though most of them started well but ended up saying that the bone is burnt and crushed. When the bone is burnt then it ought to be used for liming.

Candidates were expected to say that by the

Dry Method.

- Bone is washed or cleaned after the excesses meat adhering onto the bone is removed
- Dry
- Crush or grind
- Bag and store or

Wet Method

- Boil the bone
- Remove adhering excess meat
- Dry
- Crush/Grind
- Bag and store

(c) Candidates had a field day here as almost all of them were able to mention animals that posses Specimen C (feather) those who could not was as a result of wrong spelling e.g., duck was written as dark, guinea fowl as guinii fowl etc.

QUESTION 2

(a) (i) Mention four sources of specimen D in animal production.

(ii) State four ways in which specimen D could be used in poultry production.

(b) State four ways in which farm animals could be restrained using specimen E.

(c) Mention three activities which could be carried out using specimen E.

(a)

(i) This part was surprisingly poorly answered by most of the candidates. They were rather mentioning, feed stuffs, water troughs etc instead of sea, lakes, rivers, rainfall, lagoons and dams.

(ii) This item was well answered by most of the candidates. They were able to mention

- used to mix drugs
- used to clean the brooder house
- ducks use it in thermoregulation
- cleaning equipments
- source of drinking water to quench thirst

(b) This part was poorly answered even though most candidates mentioned that it could be tied to the head, leg, snout, they failed to add that one end should be tied to a stationary body to restrain its movement. Candidates were expected to say:

(i) Tying the rope around the neck of the animal to a stake
(ii) Tying the rope around the horns of the animal to a stake
(iii) Tying the rope around the legs
(iv) Tying the snout and the hind legs to a stake in terms of pig etc.

(c) This part was well answered by almost all the candidates. They mentioned:
(i) during castration;
(ii) medication;
(iii) dehorning;
(iv) slaughtering;
(v) transportation;
(vi) animal shows among others.

QUESTION 3

(a) (i) Name the major feed nutrients supplied by specimen F to farm animals.
(ii) List five other feed stuff which could also provide the major feed nutrient named in (a)(i).
(b) Mention four ways in which specimen F could be processed for feeding farm animals.
(c) Give two reasons why specimen G may be preferred to specimen F in feeding farm animals.
(d) Name three farm animals which could be fed with specimen G.

(a)
(i) This item was well answered by most of the candidates. They were able to mention carbohydrate except a few who could not spell carbohydrate correctly and others who mentioned all the feed nutrient
E.g., Carbohydrate, protein, vitamins, minerals hence attracting zero.

(ii) Most candidates were able to mention plantain, banana, cocoyam, potato etc except a few who repeated the cassava and others who mentioned feed stuffs in the legume family E.g., beans

(b) This part was also well answered by candidates. They came out with expected answers such as:

- Boiling;
- Roasting;
- Flaking;
- Drying;
- Chopping;
- Fermentation.

But once again some had the spelling wrong.

(c) About half of the candidates were able to explain that when specimen G is boiled, the hydrogen cyanide content which is toxic to the animal is reduced to a large extent and it is highly palatable and digestible when boiled. However, others were not able to mention the name of the toxic material in specimen F whilst others spelt cyanide as cynide

(d) This was a windfall for almost all the candidates. They were able to mention cattle, sheep, goat, grasscutter etc

QUESTION 4

(a) (i) Name three farm animals which could be infested with specimen H.

(ii) Mention two parts of the body of the host where specimen H is commonly found.

(iii) Mention four ways of controlling specimen H on a farm.

(b) (i) Name two farm animals which could be attacked by specimen J.

(ii) State four effects of specimen J on its host.

(i) This item was well answered by the candidates. Answers provided include cattle, sheep, goat etc.

(ii) This part was poorly answered by most of the candidates. Most kept mentioning the skin, fur. They are expected to mention a part of the body.

E.g.

- tail
- udder
- around the genitalia
- ears
- hooves etc

(iii) This part was also well answered by the candidates. They mentioned

- quarantine new stocks
- clean environment
- dipping with acaricides
- spraying with acaricides etc

Some candidates mentioned spraying, dusting, dipping with a killing agent e.g. acaricide or appropriate chemical

(b) (i) This part was well answered as candidates mentioned the farm animals that could be attacked by Specimen J (Tsetsefly).
e.g., cattle
goat
sheep
etc

(ii) Effects of specimen J on farm animals.
This item was well answered by most of the candidates. Some answers include:

- anaemia
- reduction in production;
- reduction in reproduction;
- trypanosomiasis

However, some candidates could not spell trypanosomiasis correctly.