TECHNICAL UNIVERSITY OF MOMBASA

ANATOMY AND PHYSIOLOGY OF FOOD ANIMALS

DEHS 14M

SUPPLEMENTARY / SPECIAL

JAN – APRIL SERIES 2016

INSTRUCTIONS TO CANDIDATE

- Answer question one in section one compulsory (30 marks)
- Answer any of the two questions from section two (30 marks)

Q1

a. Define the following terms as used in anatomy and physiology of food animals.
   i. Heifer (1mk)
   ii. Cow (1mk)
   iii. Lamb (1mk)
   iv. Bullock (1mk)
   v. Rig (1mk)

b. State the five (5) regions that from the vertebral column
c. You have been asked to appear in a court of law to give an opinion expert over a case where a farmer hay sued a butcher of sale of a suspected bull, explain how to differentiate between a bull carcass to that of s cow carcass. (5mks)
d. Describe the anatomy of a bovine heart (5mks)
e. Differentiate between the liver of an ox to that of a horse.(5mks)
f. Describe the anatomy of a horse , kidney . (5mks)

SECTION TWO

Q 2

A report has come into your officer by member of the public over a certain butchery that is selling a suspected cat mat instead of a rabbit. How can you give assurance that the meat is of a rabbit but not a cat.(15mks)

Q 3

briefly explain the various methods that you can use as a meat inspector to estimate the age of food animals especial the borne carcass. (15mks)

Q 4

Describe the digestive system of the classification of food animals. 9 15mks)

Q 5

Compare the lungs of the ox that to of a horse. (15mks)

ANATOMY & PHYSIOLOGICAL OF FOOD ANIMALS

ANSWERS

Q 1

a.

i. Heifer – a female up to its first calf.
ii. Cow – a female who has had one or more calves
iii. Lamb – a ship from birth to weaving time 3 ¼ - 4 months old.
iv. Bullock – a castrated male at an early age (6 – 12 weeks old)
v. Rig – a male pig with one undescended testicle.

b.

i. Cervical (C)
ii. Thoracic dorsal (T)
iii. Sacral (S)
iv. Coccygeal

c.

Bull

1. Highly developed muscles
2. Flesh is dark – red in colour
3. Bones are relatively large
4. Pubic bone is thick and strong
5. The roots of the penis is present and strong.

Cow

1. Muscular developing of the neck region is absent.
2. At the udder region the removed part is obvious seen
3. Present of suprammamary glands.
4. Wide pelvic cavity and pubic bones is thin
5. Fat is irregularly distributed in colour.
6. Bones are comparatively (5 mks)

d. Bovine heart – 3 ventricular furrows
- Two bones called the osseous
- Left furrow rows parallel to the posterior boarder and end of the apex
- Te right furrow extends about 3- 4 cm above the apex.
- Larger than that of the horse
- More pointed than the horse (5 mks)
- More fat than the horse
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e.

Ox liver	Horse liver
1. Reddish brown	1. Purple
2. Has gall bladder	2. No gall bladder
3. 3 lobes	3. 4 lobes
4. Blunt caudate	4. Pointed caudate lobe

f. Horse kidney
- Right side – heart shaped
- Left side - bean shaped
- Deep notch at renal pelvis
- Weighs approx – 400 – 600g

SECTION TWO (30 MARKS)

Q 2

Cat	Rabbit
1. Lateral process of the lumbar vertebrate In a point 2. 13 points of rounded ribs 3. No metacromium on the scapular 4. Tibia fibular are separated for there Complete length 5. Radius and ulna are separate 6. Has ospenis 7. Long coccygeal vertebrate	1. There are two exterior one backward and one forward 2. 12 pairs of flattered ribs 3. Present of metacromium the scapular directed backward 4. Separated only on the upper half 5. Radius and ulna are united 6. No ospenis 7. Short coccygeal (15 mks)

APH 2103

Anatomy and physiology of food animals

Q 3 age estimation

1. Teeth estimation

- Age is estimated by the period of time required for the permanent incisors teeth requested erupt and wear off. The time that taken is were out is subject to variation based on sex , breed and feeding habit
  In bovine – 1 year and 9 months
  Next pair – 2years and 6 months
  Fourth pair – 4years

2. Using horns
   Based on the amount of cartilage present and there ossification. In older animals cartilage is found covering the ends of the bones at all ages.

3. Age estimation by examination of the carcass

The ossification of the cartilage , extension of the spines of the first 5 dorsal vertebrate develop / occurs on the animal get older. The condition and degree of ossification increases the cartilage extension changes colour.

4. Age estimation using horns

- This entails counting of the number of rings on the horn. The first ring appears at a bont 2years and one appears every year there after .
  There fore the age of cattle would be the number of rings present + 1

5. Age estimation using the flesh.
   In older animals fat is sacristy the flesh is generally dark red in colour and light in texture - muscles become tougher with age

Q 4

1. Herbivores
2. Omnivores
3. Carnivores.

1. Herbivore- sheep, goals and cows eat plants anatomical features to process carbohydrates and other nutrients produced by plants

   a. Have long digestive tract up to 10 times their body length are needed due to the relative difficult with which plants foods are broken down.
   b. They have square and left flat molars which provides an ideal grinding surface to crush and grind plants.
      A lower jaw with pronounced sideways motion facilitating the grinding motion needed to chew plants.
   c. They have carbohydrate digestive enzymes in saliva. (amylase) that needs in digestive carbohydrates.
2. Omnivores – eg pig, human they have developed to eat plants and animals.

   Anatomical features
   a. Medium length digestive tract that provide the flexible to digest both plans and animals proteins
   b. Flat molars and sharp canines develop for grinding and tearing.
   c. Their saliva contains carbohydrates analyses enzymes for starch digestion.

3. – carnivore eg cats , dogs , (meat eaters)
   Classify animals whose diet is meat.
   Anatomical features:

a. Short , simple and acid digestive tract . proteins and fats from animals sources are quickly and easily digested and hence simple digestive system.
   The ability of dogs and cats to secrete hydrochloric acid is exceptional kill bacteria found in decay meat.
b. Sharp teeth designed for slicing meat and not grinding plants. They have elongated teeth for tearing and killing prey. Their molars are triangular with jagged edge , that give a smooth cutting motion like a blade on a pair of scissors.
c. Jaws move vertically to provide a smooth cutting large chunks. Of meat no saliva amylase

Q 5

Ox lungs

1. Left lungs – 3 lobes
2. Right lung - 4 -5 lobes
3. Right accessory bronchus
4. Trachea – dorsal ridge
5. Well marked lobulations
6. Weigh 2-3kg

Horse lungs

1. Long trachea 80cm
2. Large caliber
3. O trachea ridge
4. Pointed epiglotis
5. Left lung – 2 lobes
6. Right lung – 3 lobes
7. No distinct lobulation
8. No necessary bronchus
9. Weighs 2-3 kg.

(15mks)