

UNIVERSITY OF SWAZILAND
Faculty of Health Sciences
DIPLOMA IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2009

TITLE OF PAPER : MEAT HYGIENE

COURSE CODE : EHS 103

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS :

- ANSWER ANY FOUR QUESTIONS
- : QUESTION ONE IS COMPULSORY
- : EACH QUESTION CARRIES 25 MARKS.
- : WRITE NEATLY
- : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

Question 1

Multiple choice questions:

Choose the most appropriate answer;

1. Which lymph nodes are located on the edge of the masseter muscles and covered by the salivary gland which must be incised to expose it and they (is) drain the muscles of the head, eye, and ear, tongue, and cranial cavity in cattle?
 - A. retropharyngeal
 - B. parotid
 - C. prescapular
 - D. popliteal
 - E. precrural
2. Which lymph node is located at least 10 cm in front of the point of the shoulder and it drains the head, neck, shoulder, forelimbs, muscles and bones in cattle?
 - A. retropharyngeal
 - B. parotid
 - C. prescapular
 - D. popliteal
 - E. precrural
3. The lower part of the leg and foot in cattle are drained by the which lymph node;
 - A. retropharyngeal
 - B. prescapular
 - C. parotid
 - D. popliteal
 - E. precrural
4. The skin, prepuce, and superficial muscles are drained by which lymph node?
 - A. retropharyngeal
 - B. prescapular
 - C. parotid
 - D. popliteal
 - E. precrural
5. In pigs, the popliteal lymph nodes is known as the;
 - A. stifle node
 - B. hock node
 - C. superficial node
 - D. superior node
 - E. thigh node

6. Meat from a freshly killed ox carcass usually has a pH of 6.5 to 6.8 but after 48 hours it is expected to be;
- A. 7.5
 - B. 6.5
 - C. 6.0
 - D. 5.5
 - E. 5.0
7. Dark cuts in beef meat are an indication of;
- A. high pH
 - B. acidic pH
 - C. neutral pH
 - D. low pH
 - E. Both A and C
8. Which **one** of the statements is **not true**?
- A. Volatile oils in the fat of mammals give the fat and red muscle their flavor and aroma
 - B. Volatile oils are absent from white and heart muscles, such meats are comparatively tasteless and therefore require strong flavored herbs
 - C. Volatile oils are also absent from meat that has been stored for a long time or overcooked
 - D. Unsaturated fats are commonly liquid at room temperature
 - E. Double bonds in fatty acids increase the melting point in fats
9. Which **one** of these statements is **not correct** about the pelvic girdle?
- A. In female, the front of the pubis is sharp and linear
 - B. In males, the front edge of the pubis is rounded and blunt
 - C. The pelvic cavity of males is much narrower and the floor formed by ischium and pubis is concave
 - D. The pelvic cavity of females is wide to contain the uterus and the vagina, rectum and bladder
 - E. The ilium, ischium and pubis are fused at birth
10. The positional term, **anterior** refers to;
- A. nearer the head
 - B. nearer the back
 - C. nearer the tail
 - D. nearer the front
 - E. nearer the central line

11. The positional term, **ventral** refers to;
- A. nearer the head
 - B. nearer the back
 - C. nearer the tail
 - D. nearer the front
 - E. nearer the central line
12. **In pigs**, the site of shooting during stunning of animals is;
- A. the point on the forehead at the intersection of two lines drawn from the base of the horns to the eyes on the opposite side
 - B. the center of the forehead between the ears
 - C. about 1.5 cm above the level of the eyes in the mid line
 - D. all of the above
 - E. none of the above
13. **In goats**, the site of shooting during stunning of animals is;
- A. the point on the forehead at the intersection of two lines drawn from the base of the horns to the eyes on the opposite side
 - B. the center of the forehead between the ears
 - C. about 1.5 cm above the level of the eyes in the mid line
 - D. all of the above
 - E. none of the above
14. A deflowered **female pig** is known as;
- A. Gilt
 - B. Heifer
 - C. Ewe
 - D. Sow
 - E. Cow
15. A deflowered **female sheep** is known as;
- A. Gilt
 - B. Heifer
 - C. Ewe
 - D. Sow
 - E. Cow

16. The **goat's kidneys** are;
- A. bean shaped , renal pelvis present and (one renal papillae) have no lobules
 - B. left kidney is pyramid shaped, floating, whereas the right is fixed and both kidneys are lobulated (15-25 renal papillae) and have no renal pelvis
 - C. smooth bean shaped but thinner and flatter than the other animals and both kidneys are immovable
 - D. the right kidney is triangular or heart shaped and the left is bean shaped; both kidneys are immovable and non-lobulated
 - E. the right kidney is bean shaped and the left kidney is heart shaped, both kidneys are freely floating and non-lobulated
17. The **sheep's kidneys** are;
- A. bean shaped , renal pelvis present and (one renal papillae) have no lobules
 - B. left kidney is pyramid shaped, floating, whereas the right is fixed and both kidneys are lobulated (15-25 renal papillae) and have no renal pelvis
 - C. smooth bean shaped but thinner and flatter than the other animals and both kidneys are immovable
 - D. the right kidney is triangular or heart shaped and the left is bean shaped; both kidneys are immovable and non-lobulated
 - E. the right kidney is bean shaped and the left kidney is heart shaped, both kidneys are freely floating and non-lobulated
18. The **pig's kidneys** are;
- A. bean shaped , renal pelvis present and (one renal papillae) have no lobules
 - B. left kidney is pyramid shaped, floating, whereas the right is fixed and both kidneys are lobulated (15-25 renal papillae) and have no renal pelvis
 - C. smooth bean shaped but thinner and flatter than the other animals and both kidneys are immovable
 - D. the right kidney is triangular or heart shaped and the left is bean shaped; both kidneys are immovable and non-lobulated
 - E. the right kidney is bean shaped and the left kidney is heart shaped, both kidneys are freely floating and non- lobulated
19. The **spleen of cattle** is;
- A. flat and sickle shaped and bluish in color
 - B. elongated tongue shaped, reddish in color and triangular in cross-section and longitudinal ridge with fat-filled omentum attached
 - C. oyster shaped, soft and elastic to touch, reddish-brown in color
 - D. elongated oval shape, white lymph follicles (malpighian corpuscles) which are easily seen on cross-section
 - E. elongated tongue shape, white lymph follicles (malpighian corpuscles) which are easily seen on cross-section

20. The **spleen of pig** is;
- A. flat and sickle shaped and bluish in color
 - B. elongated tongue shaped, reddish in color and triangular in cross-section and longitudinal ridge with fat-filled omentum attached
 - C. oyster shaped, soft and elastic to touch, reddish-brown in color
 - D. elongated oval shape, white lymph follicles (malpighian corpuscles) which are easily seen on cross-section
 - E. elongated tongue shape, white lymph follicles (malpighian corpuscles) which are easily seen on cross-section
21. The **spleen of sheep** is;
- A. flat and sickle shaped and bluish in color
 - B. elongated tongue shaped, reddish in color and triangular in cross-section and longitudinal ridge with fat-filled omentum attached
 - C. oyster shaped, soft and elastic to touch, reddish-brown in color
 - D. elongated oval shape, white lymph follicles (malpighian corpuscles) which are easily seen on cross-section
 - E. elongated tongue shape, white lymph follicles (malpighian corpuscles) which are easily seen on cross-section
22. Myoglobin is a complex protein that;
- A. carries oxygen in the red muscles
 - B. removes oxygen from red muscles
 - C. stores oxygen in the red muscles
 - D. has no important function in the red muscles
 - E. carries nutrients to the red muscles
23. In cattle, the ischio-pubic symphysis can be split with a knife up to the age of;
- A. 2 years
 - B. 3 years
 - C. 4 years
 - D. 5 years
 - E. 6 years
24. In pleurisy is the inflammation of;
- A. heart
 - B. liver
 - C. lungs
 - D. kidneys
 - E. none of the above

25. Peritonitis is a condition that is found in the:

- A. heart
- B. liver
- C. lungs
- D. kidneys
- E. none of the above

[25 Marks]

Question 2

- a. After the animal has been slaughtered in the abattoir, the muscles of the carcass become stiff and hard, and the fat firm. Why is that so? [5]
- b. Explain the factors that influence the fat texture firmness and the color of fat in slaughtered animals. [10]
- c. Why is it important for the carcass to attain acidity after slaughter? [2]
- d. Explain the factors that are important in the control of spoilage in meat. [8]

[25 Marks]

Question 3

- a. Explain the function of the trachea in relation to respiration. [5]
- b. How would you differentiate the trachea of sheep from that of pig? [5]
- c. Show age estimation in cattle by observing the teeth. [10]
- d. What is "Halal meat"? [5]

[25 Marks]

Question 4

- a) Describe the process of food absorption in the small intestines in ruminants. [6]
- b) Why do starving cattle accumulate fat in the liver? [4]
- c) Using appropriate examples, discuss the enzymatic and hormonal digestion of food in cattle. [15]

[25 Marks]

Question 5

- a. What do you understand by pre-slaughter care in food animals? [10]
- b. How does pre-slaughter care influence the quality of meat? [10]
- c. Why is the stunning of food animals before slaughter important? [5]

[25 Marks]