

UNIVERSITY OF SWAZILAND
Faculty of Health Sciences
DIPLOMA IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2010

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 [Compulsory]

Multiple choice question: [Choose the most appropriate answer]

1. Which lymph node is located on the edge of the masseter muscle and covered by the salivary gland, at least 3 cm in front of the ear.
 - A. retropharyngeal
 - B. parotid
 - C. prescapular
 - D. submaxillary
 - E. cervical

2. Which lymph node is located at the base of the tongue and it drains the tongue and the larynx:
 - A. retropharyngeal
 - B. parotid
 - C. prescapular
 - D. submaxillary
 - E. cervical

3. Which lymph node drains the head, neck, shoulder and forelimbs
 - A. retropharyngeal
 - B. parotid
 - C. prescapular
 - D. submaxillary
 - E. cervical

4. Which one of these statements is not the function of the liver:
 - A. Produces antibodies
 - B. Stores iron
 - C. Prepares fat for utilization
 - D. Stores vitamin B₁₂
 - E. Removes foreign substances from the blood

5. Silverside bone in beef meat refers to the;
 - A. Tibia
 - B. Fibula
 - C. Femur
 - D. Sternum bones
 - E. Pelvic bones

6. Rump in beef refers to the;
 - A. Tibia
 - B. Fibula
 - C. Femur
 - D. Sternum bones
 - E. Pelvic bones

7. Brisket meat in beef refers to;
- A. Tibia bone
 - B. Fibula bone
 - C. Femur bone
 - D. Sternum bones
 - E. Pelvic bones
8. The pelvic girdle in cattle consists of;
- A. Pubis, ilium, ischium bones
 - B. Pubis, radius, ulna bones
 - C. Pubis, shin, clod bones
 - D. Pubis, ischium, cramp bones
 - E. Tibia, fibula, femur bones
9. If a food animal fat consists of a high stearin fatty acid, the resultant fat will be;
- A. A firm texture
 - B. An oily texture
 - C. A yellow color
 - D. A white color
 - E. Firm and yellow
10. The pH of a recent slaughtered cattle carcass is 6.5 but after 48 hours it is expected to be;
- A. 8.5
 - B. 7.5
 - C. 6.5
 - D. 5.5
 - E. 4.5
11. Which one of the statements is not true?
- A. Fats prevent loss of heat from the body
 - B. Saturated fats are commonly solid at room temperature
 - C. Unsaturated fats are commonly liquid at room temperature
 - D. Double bonds in fatty acids increases the melting point in fats
 - E. Double bonds in fatty acids decreases the melting point in fats
12. Stifle joint in food animals refers to;
- A. Carpus joint
 - B. Tarsus joint
 - C. Femero-tibio-patello joint
 - D. Metatarsus joint
 - E. Metacarpus joint

13. In cattle, horns can be used in the estimation of age by means of counting the rings upon the horns. Therefore when an ox has four (4) rings on the horns it is;
- A. 3 years old
 - B. 4 years old
 - C. 5 years old
 - D. 6 years old
 - E. 7 years old
14. In young animals, the cartilages are associated with the bones. As the animal age, the cartilages are converted into bones. The ischio-pubic symphysis can be cut by knife up to;
- A. 1 year
 - B. 2 years
 - C. 3 years
 - D. 4 years
 - E. 5 years
15. Which one of the statements is not true in relation to rigor mortis;
- A. There is contraction and hardening of the voluntary muscles
 - B. There is stiffening of the joints
 - C. The meat pH is retained at neutral (6.5)
 - D. There is conversion of glycogen into lactic acid within the meat or muscles
 - E. A and B
16. 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
17. The positional term, dorsal refers to;
- A. nearer the head
 - B. nearer the back
 - C. nearer the tail
 - D. nearer the front
 - E. nearer the central line
18. The positional term. Posterior refers to;
- A. nearer the head
 - B. nearer the back
 - C. nearer the tail
 - D. nearer the front
 - E. nearer the central line

19. In cattle, 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. on the neck along the jugular furrow and carotid artery
 - E. on the jugular furrow close to the head and severing carotid arteries
20. In sheep, 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. on the neck along the jugular furrow and carotid artery
 - E. on the jugular furrow close to the head and severing carotid arteries
21. A virgin female in cattle is known as.
- A. Ewe
 - B. Gimmer
 - C. Heifer
 - D. Sow
 - E. Steer
22. A male sheep is known as.
- A. Boar
 - B. Bull
 - C. Ox
 - D. Steer
 - E. Ram
23. An old sheep past breeding is known as:
- A. Sow
 - B. Ewe
 - C. Gimmer
 - D. Crone
 - E. Ovine
24. In ruminants, which stomach is known as the bible;
- A. Reticulum
 - B. Rumen
 - C. Abomasum
 - D. Omasum
 - E. Glandular stomach

25. In ruminants, which stomach is the third;
- A. Reticulum
 - B. Rumen
 - C. Abomasum
 - D. Omasum
 - E. Glandular stomach

[25 Marks]

Question 2

- a. Explain the process of rigor mortis in cattle after slaughter? (5)
- b. What conditions are necessary for rigor mortis to start? (3)
- c. Using appropriate examples explain the difference in the color of muscles (meat) of different food animals. (4)
- d. Meat inspection involves the examination of the carcass lymph nodes. List all the lymph nodes located on the following organs in cattle:
 - ◆ Head
 - ◆ Intestines
 - ◆ Lungs
 - ◆ Liver
 - ◆ Thigh
 - ◆ Neck
 - ◆ Genital organs of female
 - ◆ Genital organs of males
 - ◆ Kidney

(13)

[25 Marks]

Question 3

You are required to perform a comparative anatomy for these food animal organs.

- a. Spleen in cattle, pigs and sheep (6)
- b. Liver in cattle, pigs and sheep (8)
- c. Kidneys in cattle, pigs and sheep (6)
- d. Lungs in cattle, pigs and sheep (5)

[25 Marks]

Question 4

- a) Describe the process of digestion of carbohydrates and food absorption in the small intestines in food animals. (8)
- b) Why do starving cattle have a lot of fat in the liver? (3)
- c) Discuss the hormonal digestion of food in cattle? (8)
- d) Explain the roles played by stearin, palmitin and olein fatty acids in fats characteristics and appearance. (6)
- [25 Marks]**

Question 5

- a) How do the following pre-slaughter care factors affect the quality of meat?
- fasting, (3)
 - resting, (4)
 - Withdrawal of antibiotics? (2)
- b) What is "Halal meat"? (5)
- c) How does 'Halal meat' differ from 'Kosher meat'? (4)
- d) Estimate the age of cattle by using the bones. (4)
- e) Why is stunning of cattle important? (3)
- [25 Marks]**