



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2017

TITLE OF PAPER : MEAT HYGIENE

COURSE CODE : EHM 304

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS :

- ANSWER **ONLY FOUR** QUESTIONS
- QUESTION **ONE IS COMPULSORY**
- EACH QUESTION CARRIES 25 MARKS.
- READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- NO PAPER SHOULD BE BROUGHT INTO THE EXAMINATION ROOM.
- 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 Best Answer)***

1. The organs of excretion; rectum and urinary bladder are located in which of the following vertebrae columns;
 - A. cervical
 - B. thoracic
 - C. lumbar
 - D. sacral
 - E. caudal

2. A deflowered female pig is known as the;
 - A. sow
 - B. ewe
 - C. porcine
 - D. gimmer
 - E. hogg

3. An entirely male goat is known as the;
 - A. stag
 - B. ram
 - C. boar
 - D. hog
 - E. ovine

4. Marbling in meat refers to;;
 - A. the muscle fiber that is served by a nerve fibril and contains an amount of myoglobin.
 - B. the proportion of connective tissue to muscle tissue and the amount of fat intertwined within the muscle bundles.
 - C. the muscle or flesh or meat that forms most of the carcass; it's made of voluntary striated muscles and attaches to bones.
 - D. the involuntary muscles found in visceral organs associated with digestive and respiratory systems.
 - E. muscle fibers which are arranged in bundles surrounded by fibrous connective tissue.

5. Which lymph node drains the head, neck, shoulder, and forelimb?
 - A. submaxillary
 - B. parotid
 - C. prescapular
 - D. retropharyngeal
 - E. precrural

6. Which lymph node drains the tongue, head, eye, and ear?
A. submaxillary
B. parotid
C. prescapular
D. retropharyngeal
E. precrural
7. Endomysium is the;
A. connective tissue around the entire muscle
B. sheet that surround bundles of muscle fibers
C. connective tissue for individual muscle fiber
D. proportion of connective fiber to muscle and tissue
E. amount of fat intertwined within the muscle bundles
8. ----- muscle meat is the outer side of the thigh and covered by the tensor fascia lata, which runs from the outer angle of the ilium to the patella.
A. topside
B. silverside
C. rump
D. chuck
E. brisket
9. ----- muscle meat is made of the sacrum and wing of the ilium, it also include the psoas and gluteus muscles.
A. topside
B. silverside
C. rump
D. chuck
E. brisket
10. Which one of the statements is **not correct** in relation to the vertebrae column?
A. The coccygeal is also known as the caudal or tail.
B. The dorsal is also called the thoracic or chest.
C. The sacral is also known as the pelvic or hip.
D. The lumber is sometimes called the loin or abdominal.
E. The coccygeal may also be called the pelvic or hip
11. Which one of the statements is **not correct** in relation to the heart circulation?
A. The heart is made of three muscles and is divided into four chambers
B. The outer serous membrane (epicardium)
C. The inner lining (endocardium)
D. The thick muscle membrane (myocardium)
E. The heart is enclosed in strong sac, within the sac, there is a small amount of fluid(epicardial fluid)

12. Choose the statement that best describes the heart of cattle.
- A. The general heart look twisted as the right ventricle appears to sag
 - B. There are three (3) furrows that are seen on the ventricle and the right or posterior furrow extend to about 3-4 cm above the apex.
 - C. The lower edge of the left auricle is notched and lower than the right.
 - D. The heart has less fat but oily and yellow.
 - E. The heart is more globular, broad and shorter than goat heart, and it has a blunt apex.
13. In which of the four stomach compartments in sheep is sometimes known as the “honeycomb”.
- A. rumen
 - B. abomasum
 - C. reticulum
 - D. omasum
 - E. glandular
14. Deer fat is;
- A. Fairly firm and white in color with slight yellow tint
 - B. Very firm and pure white
 - C. Fairly firm and yellow
 - D. Very soft and grey white
 - E. Soft and golden yellow
15. The positional term, lateral refers to;
- A. nearer the head
 - B. nearer the back
 - C. nearer the front
 - D. nearer the tail
 - E. further from the central line
16. The pelvic girdle in cattle consists of;
- A. pubis, ilium, and ischium bones
 - B. ilium, pubis and ulna bones.
 - C. ischium, ilium and shin bones
 - D. pubis, femur and tibia
 - E. femur, tibia, and fibula bones.
17. 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, and the ischium and pubis form a level floor
 - E. In ox, the front edge of the pubis is blunt but linear

18. Which statement is **not correct** in relation to haemal lymph nodes?
- A. contains numerous white blood cells and red blood cells in various stages of disintegration.
 - B. haemal lymph nodes are not so common in pigs and sometimes absent.
 - C. in sheep there are commonest beneath the peritoneum in the sublumbar region.
 - D. haemal lymph nodes are similar to lymph nodes but smaller in size.
 - E. there are more numerous in animals suffering from anaemia.
19. The tongue of deer is (has);
- A. smooth and devoid of papillae except for two vallate papillae near the root.
 - B. edges that have large piliform papillae which interlock with similar papillae inside the cheek
 - C. the piliform papillae near the tip of the tongue are short and blunt, giving a smooth feel
 - D. comparatively smooth tongue with very short papillae and very small dorsal prominence
 - E. long and round ended, giving a shape of a spatula
20. The tongue of goat is (has);
- A. smooth and devoid of papillae except for two vallate papillae near the root.
 - B. edges that have large piliform papillae which interlock with similar papillae inside the cheek
 - C. comparatively smooth tongue with very short papillae and very small dorsal prominence.
 - D. the piliform papillae near the tip of the tongue are short and blunt, giving a smooth feel
 - E. short, narrow and pointed at the tip and on most part it is smooth.
21. Medulla or marrow of bones is;
- A. creamy white with a faint tinge of pink, hard and brittle
 - B. located inside most bones and made up of many bony plates
 - C. red in newly born animals, but as the animal grows it turns orange and final yellow
 - D. located in rapid growing sites and turned into bones when the animal mature
 - E. chemical composed of calcium phosphate 83%, calcium carbonate 10% and salts at 7%.

22. Which of the statements is **not correct** in relation to insulin?
- A. The pancreas is stimulated by secretin in order to produce insulin
 - B. To ensure that the liver is kept well stored with glycogen, insulin must be provided by the pancreas
 - C. the insulin circulate in the blood to activate the liver to store glucose
 - D. When the small intestines are distended, the walls of the small intestines will produce insulin hormone
 - E. the insulin and glucagon hormones act antagonistic in order to keep the amount of glucose standard.
23. 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
24. ----- is found in the saliva of pigs for the digesting carbohydrates.
- A. amylase enzyme
 - B. rennin enzyme
 - C. maltase enzyme
 - D. ptyalin
 - E. invertase enzyme
25. Why does overcooked meat or meat stored for a long period tends to lose its flavor?
- A. Heat drains the flavor into the cooking water
 - B. In volatile fats, the aroma and flavor is diluted by too much cooking water.
 - C. Heat in overcooked meat tends to denature the volatile fats.
 - D. In overcooked or too long stored meat, the aroma and flavor evaporate readily
 - E. Both answer A and B

[25 Marks]

Question 2

- a. Discuss the importance of the lymphatic system and lymph nodes in meat inspection. [4]
- b. List all the cattle lymph nodes that are incised and examined during routine meat inspection in the abattoir. [8]

- c. How does “fasting and resting” during pre-slaughter care of food animals ensures good quality meat? [5]
 - d. Goats have natural white fats, but, if undernourished or starved, the fats turns yellower. Explain the statement. [3]
 - e. In food animal’s, the fats consistency, and color are different for different animals. Using appropriate examples, explain why that is so. [5]
- [25 Marks]**

Question 3

- a. You are given a table full of tongues and livers of cattle, sheep and pigs. Explain how you would differentiate the organs in relation to sheep, pig and cattle. [20]
 - b. In old age, it is common to see cattle sleep while standing. Explain why? [3]
 - c. What is the name and structure of the third stomach in ruminants? [2]
- [25 Marks]**

Question 4

- a. Explain the factors that would lead you to suspect that a carcass meat was sourced from a sick animal. [6]
 - b. Explain the major purpose of bile in the digestion process. [3]
 - c. What is “halal meat”? [5]
 - d. Which ventricle is thicker between the left and right and why? [4]
 - e. What is a jaundiced carcass meat? [3]
 - f. Describe the process of food absorption in the small intestines. [4]
- [25 Marks]**

Question 5

Swaziland Meat industries (SMI) export red meat to the European Union (EU). The meat exported to (EU) should be of high quality and safe for human consumption. Explain how you are going to achieve these.

[25 Marks]