

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

TITLE OF PAPER : MEAT PATHOLOGY

COURSE CODE : EHS 209

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS :

- : ANSWER ONLY 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 Best Answer)

1. Which statement is **true** in relation to pelagic fish?
 - A. have about 20% or more fat in their muscles
 - B. are found swimming in the middle and the surface of water
 - C. examples include; mackerel and haddock fish
 - D. Both A and B
 - E. Answer A,B and C

2. Which statement is **true** in relation to emaciation?
 - A. Carcarse is moist and watery and may be oedematous
 - B. Bone marrow is red and watery
 - C. Fat scanty and gelatinous
 - D. Muscle pale and flabby and pits on pressure
 - E. All of above

3. Cloudy swelling is;
 - A. A type of degeneration that may affect the liver, kidney, heart, and muscular tissue
 - B. Affected organs are slightly enlarged and may have appearance of having been boiled
 - C. Flesh may have small, scattered haemorrhages
 - D. Both A and B
 - E. Muscle pale, flabby and pits on pressure

4. In cattle, which symptom(s) are or is associated with Johne's diseases.
 - A. Early development of diarrhea which is foul smelling and which contains stains of blood
 - B. Wasting of the muscles of the hind quarter, loss of condition, and rough skin coat
 - C. The submaxillary lymph nodes are oedematous resulting to emaciation
 - D. The carcass is emaciated with the fat showing a dead white appearance which lacks luster and also tends to be wet and sloppy, particularly by the brisket
 - E. Answer B, C and D

5. Which statement(s) is or are **not true** in relation to tuberculosis causative agents?
 - A. Mycobacterium tuberculosis susceptibility to cattle; mainly localized or confined to the bronchial and mediastinal lymph nodes
 - B. Mycobacterium tuberculosis is a slender, rod shaped, anaerobic gram positive organism.
 - C. Mycobacterium avium susceptibility to cattle; commonly localized in the mesenteric lymph nodes or rarely in the retropharyngeal lymph nodes
 - D. Mycobacterium tuberculosis susceptibility in sheep or goat; if contracted it is severe

- E. *Mycobacterium avium intracellulare* is prevalent in people who are HIV positive.
6. Nephritis is the condition associated with the inflammation of the;
- A. kidney
 - B. lung
 - C. heart
 - D. spleen
 - E. liver
7. Capons, in poultry refers to;
- A. a young bird of either sex, up to ten weeks
 - B. a chicken that is over two (2) years old
 - C. castrated or neutered males to provide higher quality meat
 - D. young male from day of hatch to approximately one year
 - E. a young female from a day of hatch to one year
8. Broiler, in poultry refers to;
- A. a young a young bird of either sex, up to ten weeks
 - B. a chicken that is over two (2) years old
 - C. castrated or neutered males to provide higher quality meat
 - D. young male from day of hatch to approximately one year
 - E. a young female from a day of hatch to one year
9. Boiler, in poultry refers to;
- A. a young a young bird of either sex, up to ten weeks
 - B. a chicken that is over two (2) years old
 - C. castrated or neutered males to provide higher quality meat
 - D. young male from day of hatch to approximately one year
 - E. a young female from a day of hatch to one year
10. Which of the following statement is not true in relation to birds or poultry?
- A. Pigeons may not lay eggs in the absence of a male
 - B. The diaphragm in birds divides the thoracic and abdominal cavity and is also involved in respiration as in mammals.
 - C. Birds have no urine bladder, therefore do not produce a watery urine as do animals
 - D. The main function of the gizzard in birds is the grinding and mixing of feed in preparation for digestion in the small intestines
 - E. Birds cannot swallow food but the tongue moves up and down forcing food down the esophagus

11. Which of these fish is able to spread Scombroid food poisoning
 - A. Haddock
 - B. Cod
 - C. Halibut
 - D. Mackerel
 - E. Whiting

12. Which of these shellfish are known as filter feeders?
 - A. oysters
 - B. cockles
 - C. winkles
 - D. prawn
 - E. snails

13. Which of these shellfish is a crustacea?
 - A. oysters
 - B. cockless
 - C. winkles
 - D. prawns
 - E. snails

14. Histamine-Associated Poisoning (Scombroid) food poisoning is caused by;
 - A. eating tuna, mackerel, and other fish
 - B. eating toxic mussels, clams, oyster, scallops or cockles
 - C. eating denoflagellates such as *Gonyaulax catenella*
 - D. eating food contaminated by scombroid toxins
 - E. eating spoiled or rotten fish

15. Paralytic Shellfish Poisoning (PSP) food poisoning is caused by;
 - A. eating tuna, mackerel, and other fish
 - B. eating toxic mussels, clams, oyster, scallops or cockles
 - C. eating denoflagellates such as *Gonyaulax catenella*
 - D. eating food contaminated by (PSP) toxins
 - E. eating spoiled or rotten fish

16. Which of these statement is **not true** in relation to Actinobacillosis in cattle;
 - A. Lymph nodes draining the affected areas are enlarged and may erupt with pus
 - B. Lesions may develop on the gums, cheeks, palate or in the subcutaneous tissue on any part of the body
 - C. Lesions often appear in the form of ulcers which exude pus
 - D. The distortion of the bone and the teeth make it difficult to masticate
 - E. The function of pharynx and respiratory tract is often impaired

17. In cattle, which of these statements is **not true** in relation to Black leg disease?
- A. muscles areas most subjected to trauma are mainly affected
 - B. kidney and liver are grossly enlarged and congested, developing brown and porous areas (foaming organs)
 - C. the spleen is grossly enlarged and rigor mortis is absent
 - D. symptoms seen include; high fever, depression, and anorexia
 - E. pleural and peritoneal cavities contain a blackish-red fluid
18. In cattle, which of these statements is true in relation to Anthrax diseases?
- A. muscles areas most subjected to trauma are mainly affected
 - B. kidney and liver are grossly enlarged and congested, developing brown and porous areas (foaming organs)
 - C. the spleen is grossly enlarged and rigor mortis is absent
 - D. symptoms seen include; high fever, depression, and anorexia
 - E. pleural and peritoneal cavities contain a blackish-red fluid
19. During the ante-mortem inspection in the abattoir, you observe high fever, muscle tremor and after death bloody discharge is seen from all natural orifices. Which disease would you suspect?
- A. Black quarter
 - B. Anthrax
 - C. Bovine tuberculosis
 - D. Salmonellosis
 - E. None of the above
20. Which ante-mortem signs would lead you to suspect African Swine fever (ASF) in pigs?
- A. Discharge of sticky and muco-purulent material from eyes and sometimes from the nose
 - B. Weakness of the hindquarters with in coordination and staggering movement
 - C. Paralysis of particular of the hindquarters and the pig moves about on its forelegs only.
 - D. Lack of appetite, high temperature and lameness are observed
 - E. Both B and C
21. If cattle is affected by tuberculosis with the involvement of the mediastinal lymph nodes resulting in enlargement, which of the following condition (s) will show?
- A. retention of air in the rumen
 - B. chronic diarrhea
 - C. whistling sounds during respiration
 - D. low moist coughing
 - E. All except, B

22. Actinomycosis disease in cattle may be differentiated from Actinobacillosis disease by the following signs;
- A. jaw bone enlargement and porous, the cavities are filled with pus
 - B. associated lymph nodes are not affected
 - C. Associated lymph nodes are oedematous
 - D. Both A and B
 - E. Both A and C
23. Actinobacillosis disease may be differentiated from Actinomycosis disease by the following signs;
- A. there is swelling at the parotid site and this may involve the tongue, which is hard and painful
 - B. lymph nodes draining the region are enlarged and may erupt with pus
 - C. sometimes the jaw bone is enlarged and porous, the cavities are filled with pus
 - D. lymph nodes draining the affected organs are not involved or affected
 - E. Both A and B
24. Swine erysipelas diseases will show skin discoloration in pigs and may be differentiated from skin discoloration caused by Swine fever and African Swine fever by;
- A. the cyanotic blotching of the skin of the limbs, abdomen and ears
 - B. the blotchy erythema on the skin and often showing as a diffuse purple discoloration on the abdomen. The skin also develop into multiple cutaneous haemorrhages
 - C. the dark red diamond-shaped skin lesions that appear on the abdomen, throat, ears and inside the thighs
 - D. the skin lesions become dark and dry up and then separate from the underlying raw skin. The dried skin can be heard to rattle when the pig is walking
 - E. Both C and D
25. Brucellosis in animals is mainly indicated by the following symptom (s);
- A. abortion and vaginal discharge
 - B. bloody diarrhea and sometimes blood in milk
 - C. ulcer in the mouth resulting into salivation and lameness
 - D. the animal is bruised and congested
 - E. Both A and B

[25 Marks]

Question 2

During the month of August/September, a disease showing symptoms that resembles Rift Valley fever (RVF) was suspected in the Malkerns Valley in Swaziland. Samples were taken to South Africa and International expertise was solicited. The samples results came back negative. Discuss therefore the transmission, symptoms and lesions in cattle and show strategies which may be adopted for control of (RVF in animals and human.

[25 Marks]

Question 3

Salmonellosis symptoms in animals exhibit two major syndromes. Explain the transmission pathways and the two forms of salmonellosis symptoms in cattle and pigs.

- Transmission [5]
- Symptoms [20]

[25 Marks]

Question 4

When Foot and mouth disease (FMD) invaded Swaziland in the year 2000, stock farmers were total crippled due to loss of income.

- a) Outline the symptoms and transmission routes of the disease that are observed [10]
- b) How the disease was eliminated? [15]

[25 Marks]

Question 5

- a) Ante-mortem examination is very important in food animals since it gives you clues of the disease likely to be seen in post-mortem. Show the ante-mortem signs of Swine fever. [6]
- b) Why is African Swine fever sometimes known as Wart disease? [4]
- c) How is African Swine fever transmitted in pigs? [5]
- d) Show the major ante- and post-mortem signs in a pig suffering from Swine erysipelas. [10]

[25 Marks]