FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
SCHOOL	VETERINARY MEDICINE		
DEPARTMENT	PARA-CLINICIAL STUDIES		
PROGRAMME	VETERINARY MEDICINE		
MODULE	VETERINARY PUBLIC HEALTH I		
MODULE CODE	V3811AV		
DATE	June 2023		
DURATION	**3 hours**	**Marks**	150

2nd Examination Paper

Examiner: Dr. med. vet. M.Y. Hemberger

Internal Moderator: Prof. U. Molini

External Moderator: Prof. D. Pfukenyi

This question paper consists of 9 (nine) pages including this front page

Instructions

Read the questions carefully
Answer all questions
Write clearly and concisely
Hand in this question paper together with the answer booklet

Part 1:

Multiple choice questions, please mark the correct answer (1 (one) mark or 2 (two) marks answers might be possible). (Total marks 27)

1.	**1. With reference to the HACCP system: The periodical checking of the temperature in a chilled storage room by means of thermometer is falling under the:** a) Monitoring action b) Corrective action c) Company action d) Auditing for prerequisites e) Competent authority check **2. What has to be done in correspondence at a Critical Control Point (CCP)?** a) Monitoring, at the established frequency b) No action c) A sampling and relevant analysis, at the established frequency d) Document checks e) Record keeping **3. How would you evaluate, during an inspection, the total absence of identified Critical Control Points (CCPs) in a HACCP plan?** a.) Negatively: Food Business Operator doesn't have the process under control. b.) Positively, if there are evidences that all possible hazards are properly managed by the pre-requisite programmes. c.) Positively, if critical limits are properly identified and managed. d.) Negatively: HACCP must include CCPs. e.) The Food Business operator can decide if or if not, he will use CCPs. f.) Evaluation of CCPs are not part of an inspection. **4. During the audit execution:** a.) Auditors can be accompanied by representatives of the company. b.) Representatives of the company will lead the audit. c.) The auditor can decide if he want to be accompanied by company representatives. d.) The exporting country will provide the rules for the audit execution. e.) Representatives of the company should not be present. f.) Auditors should always be accompanied by representatives of the company.	27 marks

5. How can evidence be collected during an audit?

a.) Just with direct observation

b.) Only workers and supervisor interviews are relevant

c.) Through documentary review and management meeting reports in different ways: direct observation, interview with workers, documents and records analysis and measurements

d.) During an audit it is not necessary to collect evidence

e.) Microbiological and residue results comparison

6. What shall be done if, during the assessment, deviations which may have serious consequences on the safety of the product are observed?

a.) Adoption of immediate corrective measures shall be requested.

b.) A written notification shall be delivered to the FBO within 15 days.

c.) Nothing, it is up to the FBO to decide if and how to adopt corrective action.

d.) The product will get destroyed.

e.) Product samples will be taken and results will determine what steps will be taken.

7. Which of the following can cause food contamination because of chemical hazards from food handlers?

a.) Perfume

b.) Dust

c.) Live insects

d.) Ear ring

e.) Hair

8. Which zoonotic food borne agent is a commonly linked to Ready-To-Eat food?

a.) *Campylobacter jejuni*

b.) Escherichia coli O157:H7

c.) Brucella melitensis

d.) Listeria monocytogenes

e.) Salmonella enteritidis

9. The main complication for zoonotic shiga toxin-producing Escherichia coli (STEC) is:

a.) Chronic reactive arthritis

b.) Meningitis

c.) Hemolytic uremic syndrome

d.) Crohn's disease

e.) Guillain Barre syndrome

10. A main complication for zoonotic Listeriosis is

a.) Chronic reactive arthritis
b.) Meningitis
c.) Hemolytic uremic syndrome
d.) Crohn's disease
e.) Guillain Barre syndrome

11. In a slaughter house the knife sterilisers must be available for cleaning and sanitation purpose therefore the sterilizer water must have a minimum temperature of:

a.) 42^0C
b.) 62^0C
c.) 82^0C
d.) 100^0C
e.) 132^0C
f.) Above 132^0C

12. A chiller used for chilling warm beef carcasses must be capable of providing uninterrupted cooling to reduce the inner core temperature of the carcass to below:

a.) 12^0C
b.) 10^0C
c.) 8^0C
d.) 4^0C
e.) 7^0C

13. The most important limiting criteria for the maximum daily slaughtering throughput in an abattoir are:

a.) The slaughter line and the chiller/freezer capacity
b.) The size of the premises
c.) The slaughter line speed/hourly throughput
d.) The amount of workers
e.) All of the above

14. Which one of the endogenous cow diseases listed below cannot be transmitted to humans through milk?

a.) Salmonellosis
b.) Q fever (Coxiella burnetii)
c.) Campylobacteriosis
d.) Vibriosis
e.) Tuberculosis (Mycobacterium bovis)
f.) Bovine spongiform encephalitis

15. Which of the public health risks listed below are important in the prevention of salmonellosis in humans?

a.) Salmonella are not highly resistant to heat, therefore, killed in 15-20 minutes at 600C.

b.) Washing of hands with soap, after using the toilet.

c.) Salmonella are not highly resistant to chemical agents, therefore, killed by commonly available disinfectants.

d.) Freezing decreases numbers, but does not kill them, therefore can be found in frozen chicken.

e.) Try to avoid cross-contamination in the kitchen.

f.) All of the above.

16. Why is it important that outside garbage containers be covered at all times?

a.) To prevent people from picking through the trash.
b.) To look cleaner to pedestrians.
c.) To hide how much food is thrown away.
d.) To give work to people to clean the garbage containers.
e.) All points are important.
f.) To contain odors that may attract pests.

17. The causative agent of Neurocysticercosis is

a.) *Ancylostoma caninum*

b.) *Cysticercus suis*

c.) *Cysticercus cellulosae*

d.) *Toxocara suis*

18. All of the following zoonotic diseases can be transmitted through direct contact with infected animals EXCEPT:

a.) Anthrax

b.) Ascaridiosis

c.) Pastereullosis

d.) Tuberculosis

e.) Bucellosis

f.) Erysipelas

19. A cattle truck has arrived at an export abattoir. During offloading, one of the cattle is unable to stand and remains lying in the truck. How should this animal be handled?

a.) It must be dragged out and slaughtered at the end of the slaughter day.

b.) A prodder must be used to get it out of the truck.

c.) It must be shot/killed on the spot.

d.) The animal will be sent back to the farm of origin.

e.) It must be brought to the slaughter floor and slaughtered immediately.

20. Define the term "disinfection" in the context of food safety

a.) The main objective of a cleaning programme is to control microbial activity; an adequate cleaning programme will eliminate nearly all the soil present.

b.) To reduce microorganisms of public health importance to levels considered safe, based on established parameters, without adversely affecting either the quality of the product or its safety

c.) To destroy or irreversibly inactivate specified infectious fungi and bacteria, but not necessarily their spores, on hard surfaces through the use of chemicals, heat or ultraviolet rays

d.) It is vital to product wholesomeness and an essential foundation for HACCP systems

21. Which of the following actions could be taken in order to "conditionally pass" a carcass with parasitic cysts?

a.) The carcass is stored for 7 days before human consumption
b.) The carcass is frozen for 10 days at minus 10 degrees Celsius
c.) The carcass is deboned
d.) The carcass is chilled to 4 degrees Celsius
e.) The carcass is frozen for 10 days at minus 10 degrees Celsius
f.) The carcass must be cooked.

22. What is the role of the official state veterinarian working at a food processing company regarding food safety system failures (non- conformance)?

a) To provide the company with solutions to solve the problems.
b) To make a deal with the company in order to find a solution in case of problems in HACCP.
c) To set corrective actions.
d) To verify if problems in the HACCP implementation have been identified and fixed by the company.
e) To cooperate with the company in order to find a solution in case of problems in HACCP.
f) To stop the production until the problem is solved.

23. Which one of these helminths does not have zoonotic potential?

a.) Taenia multiceps
b.) Taenia saginata
c.) Taenia ovis
d.) Taenia serialis
e.) Taenia solium

	24. Which of the following diseases of pigs are zoonotic? a.) Porcine Reproductive and Respiratory syndrome (PRRS) b.) African Swine Fever c.) Porcine Parvovirus d.) Rabies e.) Diamond Skin Disease f.) Coccidiosis	

Part 2: True/False questions:

If the answer is false, provide the correct information.

Questions with false answers are awarded 3 (three) marks whereas those with True answers are awarded with 1 (one) mark (Total 20 marks).

1.	Prerequisite programmes (PRP's) are food safety basic conditions and activities that are necessary to maintain a hygienic environment throughout the food chain suitable for the production, handling and provision of safe end products and safe food for human consumption.	True	False
2.	Validation with regards to food safety means obtaining evidence that the control measures managed by the HACCP plan and by the operational PRPs are capable of being effective.	True	False
3.	Critical control point (CCP) with regards to food safety means a step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.	True	False
4.	The hand wash-basins in a food processing establishment must be outside the processing area and be supplied with warm water running not less than 60^0C.	True	False
5.	The term "condemned product" means the product has passed the veterinary inspection and is declared fit for human consumption.	True	False
6.	An animal must be inspected on the day of arrival at the abattoir (ante mortem), and the inspection must be repeated on the day of slaughter if the slaughter is not done within 24 hours of arrival.	True	False
7.	Food chain means series of processes involved in the production, processing, distribution, storage and handling of an animal from primary production to consumption.	True	False

8.	Waste water from an abattoir which slaughter cattle and sheep, containing blood and ingesta can be used for irrigation of fruit trees and vegetable fields.	True	False
9.	An important reservoir for Crimean-Congo haemorrhagic fever in South Africa are dogs and cats.	True	False
10	In a rabid cow, rabies virus is most likely to be found in the highest concentration in the cerebrospinal fluid.	True	False
11	*Trichinella spiralis* is a parasite in pigs, which might be detected during meat inspection.	True	False
12	Anthrax, Plague, *Erysipelas* and Lyme disease are zoonotic and cause lesions on the skin.	True	False

Part 3: Short and long answer questions (103 marks)

1.	**You are a veterinarian working on a dairy farm. List three (3) types of hazards emanating from farm operations and animal rearing that are likely to have a negative impact on the ecosystem. Give one (1) example for each one of the hazards mentioned above.**	5 marks
2.	**Briefly describe the basic procedures applicable for the ante and post mortem inspection. (6 marks)**	6 marks
3.	**Contamination by foodborne pathogens can occur at several points along the milk production chain. Explain the most important points where contamination might occur and give one example of foodborne pathogen per identified contamination point.**	12marks
4.	**You are a veterinarian at an abattoir, and get called to the offloading area: A cattle truck arrived and one of the cattle has a broken leg and is unable to stand up.** **Which are the procedures to follow for this animal? Which other Animal Welfare procedures are in place to prevent the suffering of injured cattle. (6 marks)**	6 marks
5.	**A delegation of international OIE inspectors visiting an export abattoir would like to know the practical measures that are in place to ensure the "inactivation" of the FMD virus in cattle or small stock carcasses after slaughter. Provide the information that you would use to explain the procedure to the OIE inspector.**	8 marks

6.	**Name and explain the relevant competent authorities in Namibia, responsible for the domestic and international trade with agricultural products (meat and meat products/plant and pant products), including their main responsibilities and role in the animal/plant health sector.**	13 marks

7.	**Explain the difference between food safety and food quality and give practical examples (at least 3) for food safety control and quality control.**	12 marks
8.	**Important aspects of Animal Welfare during slaughter are concerned with the stunning and bleeding process. Define and explain in detail the correct process which should be implemented at a cattle slaughter house which will guarantee humane slaughtering of the cattle.**	12 marks
9.	**a.) Explain the main responsibilities of a Namibian state veterinarian at Food processing establishments and the applicable legal basis. (7)** **b.) Name and explain the HACCP principles.**	29 marks
	End of the examination paper	