FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
SCHOOL	VETERINARY MEDICINE		
DEPARTMENT	PARA-CLINICAL STUDIES		
PROGRAMME	VETERINARY MEDICINE		
MODULE	VETERINARY PUBLIC HEALTH I		
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Second Opportunity Examination Paper

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This memorandum consists of 10 (ten) 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. On how many principles is the Hazard Analysis Critical Control Point (HACCP) based?** a.) 4 b.) 7 c.) 9 d.) 10 e.) 8 f.) 12 **2. In the European Union (EU) legislation, food safety systems or HACCP-based systems with equivalent results are?** a.) On voluntary basis b.) Required by law c.) Prepared by the Competent Authority (CA) together with HACCP team in the establishment d.) Approved by the Competent Authority e.) Developed by the company and implemented by the Competent Authority f.) Recommended by the Competent Authority **3. Concerning the preparation of a food safety system, when should pre-requisite be in place?** a.) At the beginning, prior to the development of the HACCP analysis b.) After the development of the flow diagram c.) Before the food producing establishment is built d.) After determination of the Critical Control Points (CCPs) e.) Before the establishment starts the production f.) After the food safety system is developed, but not implemented yet. **4. What is a Critical Control Point (CCP)?** a.) A procedure, a step, an operational phase that if not controlled properly can lead to an unacceptable risk b.) Each non-conformity detected during auditing activity c.) A target value d.) A point which is critical but possible to control e.) A point which indicates a microbiological sample point. f.) A non-conformity detected during production.	

5. In case that a critical limit is exceeded:

a.) The food must be treated as a by-product.
b.) HACCP plan shall be revised.
c.) A communication must be sent immediately to Competent Authority.
d.) A corrective action shall be adopted.
e.) The production line must be stopped until the issue is solved.
f.) The product must be separated until further notice.

6. What needs to be done prior to the identification of a Critical Control Point (CCP)?

a.) Identify corrective actions for every Critical Control Point
b.) Check if the prerequisites are sufficient to control a possible identified hazard
c.) Identify and set critical limits
d.) Develop a flow diagram and do the HACCP analysis
e.) Check if the records are kept
f.) Identify the monitoring procedures

7. What is "monitoring of a critical control point in the context of food safety"?

a.) Permanent visual check to be carried out in correspondence of a control point
b.) Sporadic check of a critical point during production
c.) Continuous but spontaneous verification of a critical control point
d.) End product sampling
e.) Planned activity of sampling to assess whether a critical control point is under control
f.) Planned sequence of observations or measurements to assess whether a critical control point is under control.

8. What is the role of the official state veterinarian working at a food processing company regarding food safety system failures?

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

9. At the end of the inspection, if non-compliances related to the implementation of the HACCP plan were detected, the official veterinarian shall:

a.) Write a report indicating possible solutions that must be adopted.
b.) Write report on the parts of the plan in which non-compliances were detected, without indicating possible solutions.
c.) Prepare a draft of a new HACCP plan, together with the Food Business Operator.
d.) Localize the end products until the non-compliances are addressed.
e.) Request a new HACCP analysis, made by a consultant.
f.) Close the establishment until all the non-compliances are rectified.

10. The purpose of the Veterinary Cordon Fence (VCF) in Namibia is:

a) To prohibit movement of game species from the northern to the southern regions.
b) To assist the Namlits (Namibia Livestock Identification and Traceability) system in controlling livestock movement in all regions.
c) To demarcate the WOAH recognized Foot and Mouth Disease free zone from the rest of the country, which is not FMD free
d) To recognize the area south of the VCF as free from CBPP (Contagious Bovine Pleuropneumonia).
e) To prevent Namibia from losing access to high value export markets that require specific FMD disease freedom
f) To control the spread of Lumpy Skin Disease to the northern areas

11. With reference to the Codex Alimentarius, which ONE of the following is included in the 12 "steps" that can be used in the process of developing a Hazard Analysis Critical Control Point (HACCP) plan for food safety?

a.) Use a master cleaning schedule

b.) Establish ante mortem procedures

c.) Establish post mortem procedures

d.) Responsibilities of the official state veterinarian

e.) Construct a process flow diagram

f.) Documented checks on stunning and bleeding

12. Which ones of the following principles are NOT part of the seven principles of HACCP?

a.) Implement pre-requisite programs

b.) Conduct hazard analysis

c.) Responsibilities of the official state veterinarian

d.) Identify critical control points

e.) Identify critical limits

13. Which of the following actions could be taken 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 3 days at minus 18 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.

14. How would you evaluate, during an inspection, the total absence of identified CCPs in a HACCP-based food safety system?

a.) Negatively: Food Business Operator doesn't have the process under control
b.) Positively, if there is evidence that all possible hazards are properly managed by pre-requisite programs
c.) Neutral, as it is not relevant for the inspection outcome.
d.) Positively, if critical limits are properly identified and managed
e.) Negatively, as it is required by law.
f.) Neutral, as it has nothing to do with the total food safety system

15. 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 using chemicals, heat or ultraviolet rays.
d.) It is vital to product wholesomeness and an essential foundation for HACCP systems

16. What does the word "insanitary" mean in the Food Safety context?

a.) A state or occurrence which may lead to the avoidable contamination of edible food products when it is exposed, processed, handled, stored or packaged.

b.) Any edible food products produced, packed, or held under required conditions where it may have become contaminated with filth or may have been rendered injurious to health.

c.) An avoidable occurrence which causes contamination of edible food products.

d.) A state, condition, or occurrence which may lead to the contamination or adulteration of edible food products when they are exposed, processed, handled, stored or packaged.

17. 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

18. Why is it important that outside garbage containers be always covered?

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

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

a.) Anthrax
b.) Ascaridiosis
c.) Pastereullosis
d.) Tuberculosis
e.) Brucellosis
f.) Erysipelasis

20. Which of the following diseases of pigs is zoonotic?
a.) Porcine Reproductive and Respiratory syndrome (PRRS)
b.) African Swine Fever
c.) Porcine Parvovirus
d.) Diamond Skin Disease
e.) Porcine Circovirus (PCV2 -PCV3)

21. Why do we pasteurize milk?
a.) To remove the milk fat
b.) For destruction/reduction of pathogenic micro-organisms and spoilage bacteria
c.) For change of taste
d.) For reduction of sugar
e.) To increase the shelf-life
f.) For increasing the protein content

22. 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

23. Which microorganism has been associated with waterborne diseases and is resistant to chlorination treatment?
a.) *Campylobacter*
b.) *Vibrio cholera*
c.) *Giardia* spp.
d.) *Shigella* spp.

Part 2: True/False questions:

If the answer is false, provide the correct information.

Questions with false answers are awarded 3 marks, whereas those with true answers are awarded 1 mark. Total (17 marks).

If the false answer is not rectified correctly, a 0 (zero) mark will be granted.

1.	A carcass, including all body parts, must be condemned when, during postmortem inspection, excessive *Cysticercus bovis* cysts are observed.	True	False
2.	Verification with regard 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.	In a rabid cow, the rabies virus is most likely to be found in the highest concentration in the cerebrospinal fluid.	True	False
5.	The hand washbasins 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
6.	Bacillus, clostridium and lactobacillus are classified as mesophilic bacteria in milk, which grow at 25-45°C.	True	False
7.	Food chain means a series of processes involved in the production, processing, distribution, storage and handling of an animal from primary production to consumption.	True	False
8.	The main responsibilities of a state veterinarian at an abattoir are ante mortem, post mortem, certification based on the respective export requirements and verification of the Food Safety system of the company.	True	False
9.	Pasteurization of milk is the destruction of pathogenic micro-organisms, and most spoilage organisms by making noticeable changes to the taste and additions to the nutritional value, and so promote an increased shelf-life.	True	False

Part 3: Short and long answer questions (106 marks)

1.	**Regarding Animal welfare before and during slaughter:** **a) Describe the different methods of stunning in small and large livestock slaughterhouses in Namibia (8 marks)** **b) Describe the procedures for correct bleeding of small and large livestock (5 marks)**	13 marks
2.	**One Health means not to change what we are doing, but how we do it! This means that human beings must change the way of living and change their behaviours.** **What techniques can be used to initiate behavioural changes in human beings? (6 marks)**	6 marks
3.	**You are a veterinarian at an abattoir and get called to the offloading area: A cattle truck arrived and one of the animals has a broken leg and is unable to stand up.** **What are the procedures to follow for this animal? Which other Animal Welfare procedures are in place to prevent the suffering of injured cattle? (5 marks)**	5 marks
4.	**A delegation of international WOAH 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 WOAH inspector.**	8 marks
5.	**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 plant products), including their main responsibilities and role in the animal/plant health sector.**	12 marks

6.	**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
7.	**Through a biological risk management program, various risk factors are managed through effective control measures. List four**	5 marks

	risk factors that can promote zoonotic disease transmission in an animal facility. (5 marks)	
8.	**a) Explain the responsibilities of a Namibian state veterinarian in relation to the Food safety system implemented at the food processing establishments and the applicable legal basis. (6)** **b) Name and explain the HACCP principles. (22)**	28 marks
9	**All food processing establishments must use water that is fit for human consumption.** **a.) Explain which microbiological tests are required to guarantee that the water is safe for food production (5 marks).** **b.) Give the minimum frequency between sample collections and explain, which steps are taken if the results are positive? (5 marks)**	10 marks
10	**Bush meat and food safety: Both are important for food & nutrition security. The disadvantage is the conservation concern of bush meat, elaborate on these concerns. (7 marks)**	7 marks
	End of exam paper	