FACULTY	Health Sciences and Veterinary Medicine		
	School of Veterinary Medicine		
DEPARTMENT	Para-clinical Studies		
SUBJECT	Veterinary Public Health II		
SUBJECT CODE	V3812AV		
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DURATION	3 hours	**MARKS**	150

2nd Opportunity Examination Paper

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This memorandum consists of 7 (seven) 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 (Total 20 marks):

Tick the correct answer (1 (one) or 2 (two) answers might be possible)

1.	**1. The effect on pre-slaughter stress on meat quality is** a.) Pale soft exudate due to high pH b.) Dark firm dry due to low pH c.) Pale soft exudate due to low pH d.) Dark firm dry due to high pH **2. The most important limiting criteria for the maximum daily slaughtering throughput in an abattoir are:** a.) The chiller/freezer capacity b.) The size of the premises c.) The slaughterline speed/hourly animal throughput d.) The amount of workers e.) The amount of cattle received f.) The lenghts of the slaughterline **3. The assessment of animal welfare status on animals during off loading at the abattoir can be evaluated through observation of:** a.) Competence of staff who handle, stun, bleed, restrain, shackle, hoist, bleed live animals, check stunning has worked. b.) A documented animals welfare programme. c.) The percentage of thin animals. d.) Lack of education of slaughterhouse employees. e.) The percentge of animals with sores, bruises and leasions. **4. The head to head electrical stunning at Namibian abattoirs is performed on:** a.) All species b.) Calves, goats and sheep c.) Poultry and pigs d.) Sheep and pigs **5. In a slaughter house the knife sterilisers must be availabe for cleaning and sanitation purposes, therefore the sterilizer water must have a minimum temperature of:** a.) 42^0C b.) 62^0C c.) 82^0C d.) 102^0C e.) 132^0C	20 marks

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

a.) 12^0C
b.) 8^0C
c.) 4^0C
d.) 2^0C
e.) 7^0C

7. Verifying of animal welfare procedures before and during slaughtering is a crucial part of your duties at an export abattoir. The time between cattle stunning and killing:

a.) Must be less than 120 sec
b.) Must be less than 60 sec
c.) Must be less than 20 sec
d.) Must be less than 15 sec
e.) Depends on the availability of the equipment.

8. Which helminth infestation in humans can be avoided by freezing infested bovine meat?

a.) *Taenia bovis*
b.) *Taenia saginata*
c.) *Taenia solium*
d.) *Ascaris suum*
e.) *Echinococcus granulosus*

9. The most common route of infection for humans by the Rift Valley fever virus is:

a.) Saliva and nasal discharges of sheep and cattle
b.) Contact with infected tissues
c.) Mosquito bites
d.) Self-vaccination
e.) Airborne infection

10. Which species of mammal is the host for the adult stage of *Echinococcus granulosus*, the cause of "hydatid" disease in humans?

a.) Chicken
b.) Cats
c.) Pigs
d.) Dogs
e.) Sheep
f.) Cattle

11. 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.) The animal will be sent back to the farm of origin.
d.) It must be shot/killed on the spot.
e.) It must be brought to the slaughter floor and slaughtered immediately

12. Which one of the following diseases, which can occur if drinking water is contaminated with faecal run-off from cattle feedlots, results in diarrhoea in humans and can be fatal in immune-compromised individuals?

a.) Histomoniasis
b.) Cysticercosis
c.) Cryptosporidiosis
d.) Trichomoniasis
e.) Sarcosporidiosis

13. Cows that are chronically infected with *Brucella abortus* harbour the organisms in which of the following organs or organ groups?

a.) Uterine horns
b.) Vulva
c.) Entire genital tract
d.) Intestines
e.) Udder and affected Lymph nodes

14. Which one of the following products is prohibited by law to be used for ruminants intended for beef production in Namibia?

a.) Cotton seed meal
b.) Probiotics
c.) Phenylbutazone
d.) Urea
e.) B Vitamins

15. Concerning the preparation of an HACCP plan at a food processing establishment, when should pre-requisite be in place?

a.) After the development of the plan, before the establishment starts with the production.
b.) After determination of the Critical Control Points.
c.) Before the Competent Authority approval.
d.) At the beginning, prior to the development of the HACCP Plan.
e.) After the company is approved by the Competent Authority.

16. How can evidence be collected during an official food safety audit?

a.) Just with direct observation.
b.) In different ways: direct observation, interviews with the staff members, documents, mesurtments and record analysis.

	c.) Only workers and supervisor interviews are relevant. d.) Through documentary review and managment meeting reports. e.) During an audit it is not necessary to collect evidence. f.) Microbiological and residue results comparison. **17. 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.) 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 packed. c.) 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. d.) An avoidable occurrence which causes contamination of edible food products.	

Part 2 True/False questions:

If the answer is false, provide the correct information.

In questions with false answers the corrections are awarded 3 marks whereas those with true answers are awarded 1 mark (total 25 marks).

1	During an official food safety audit, the total absence of identified Critical Control Points (CCPs) in the HACCP analysis was evaluated positively, as there was evidence that all possible hazards are managed through the pre-requisite program.	True	False
2	Biosecurity is the series of management practices that prevent the spread of infectious agents between animal groups on a farm or the management practices designed to prevent the infectious agent from leaving the farm	True	False
3	Meat and Bone Meal is prohibited by law to be fed to ruminants in Namibia	True	False
4	A chicken carcass with multiple grey nodules in the liver and spleen must be totally condemned.	True	False
5	If a carcass with icterus tests positive on the phase test for bilirubin in the joints, the carcass should be partially passed, with removal of affected parts.	True	False
6	The Codex Alimentarius guideline includes the establishment of ante and post mortem procedures in the 12 "steps" that can be	True	False

	used in the process of developing a Hazard Analysis Critical Control Point (HACCP) plan for food safety.		
7	A pig carcass with severe *Cysticercus cellulosae* (pork measles) infestation must be conditionally approved.	True	False
8	The load of goods with milk, meat or fish products can safely wait for transfer to cold store for two to three hours at room temperature.	True	False
9	Preservative kills all the microbes in food.	True	False
10	The slicing, cutting and mincing of the raw materials and food cause them to easily become perishable.	True	False
11	Slow heating of food from +6 to +60 degrees centigrade decreases the risk of food poisoning.	True	False

Part 3 Short answer questions (22 marks):

1.	**The most obvious products of animals are edible products ("meat") which are intended for human consumption (eg carcasses, offal, etc).** **However, there are several parts of an animal which are not intended for human consumption (by-products) and several parts which might be suitable for human consumption (co-products)** **Describe the difference of the terms by-products and co-products (2 marks for each term definition) and give two examples for each group (4 marks)**	8 marks
2.	**A delegation of international OIE inspectors visiting an export abattoir south of the Veterinary Cordon Fence would like to know the practical measures that are in place to ensure the "inactivation" of the Food and Mouth Disease virus in cattle or small stock carcasses after slaughter.** **Explain which practical measures are in <u>place after slaughtering and post mortem</u> inspection of the carcasses?**	9 marks
3.	**Mechanical stunning renders an animal unconscious and ensures freedom from pain. Describe the visible signs you can observe on an animal that was effectively stunned? (5 marks)**	5 marks

Part 4 Long answer questions (83 marks):

4.	**According to the WTO TBT (Technical Barriers to Trade) Agreement, technical regulations should be based on international standards.** **4.1 Describe the characteristics of a standard (13 marks)** **4.2 And elaborate on the difference between regulations and standards. (6 marks)**	19 marks
5.	**A chemical residue is the presence of such chemical in one or more tissues of the body for some time after administration particularly at the time of slaughter. In Namibia veterinary drugs and their use are regulated and controlled by law.** **5.1 Name the applicable legislation, which prohibits/controls the use of certain substances. (3 marks)** **5.2 Describe and give the different group substances classification as stipulated in the applicable legislation. (8 marks)**	11 marks
6.	**After the detection and detention of bovine cysticercosis during post mortem inspection the state veterinarian has to do the secondary meat inspection following specific procedures, explain in detail the:** **6.1 Additional actions to be taken (10 marks)** **6.2 Treatment regimen for the affected carcass and organs, which passed the inspection conditionally (9 marks)**	19 marks
7.	**Microbiological testing at specific points in the food chain is an important tool for verifying a risk-based approach to food safety. Where appropriate, microbiological performance objectives or performance criteria should be included in the verification of process control. Name and explain both criteria. (14 marks)**	14 marks
8.	**8.1 Name and define the inspections which should be performed by a veterinary public health official (Veterinarian) at an abattoir to guarantee that meat is safe for human consumption (4 marks)** **8.2 State the aims/objectives of <u>each inspection</u>. (16 marks)**	20 marks
	End of the VPH II exam paper	