UNIVERSITY OF NAMIBIA

FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
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DEPARTMENT	PARA CLINICAL STUDIES		
MODULE	INFECTIOUS DISEASES II		
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FIRST OPPORTUNITY EXAMINATION

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This question paper contains eight (8) pages including this front page.

SECTION A: MULTIPLE CHOICE QUESTIONS **[25 MARKS, 1 MARK EACH]**

1. Major losses in infectious bronchitis are due to:
   a. Decreased egg production
   b. Poor quality eggs
   c. Heavy mortality
   d. All the above

2. Which one of the following is not of public health significance?
   a. Cowpox
   b. Buffalo pox
   c. Fowl pox
   d. Pseudo cowpox

3. The test recommended by WOAH in the diagnosis of Peste des petits ruminants (PPR) is:
   a. Haemagglutination assay
   b. Enzyme-linked immunosorbent assay
   c. Complement fixation test
   d. Immunofluorescent test

4. Vesicular stomatitis is important because the disease resembles:
   a. Foot and Mouth disease
   b. Smallpox
   c. Rift Valley Fever
   d. Cowpox

5. The natural reservoir involved in the transmission of FMD in Namibia is:
   a. Wild-beast
   b. Kudu
   c. Elephants
   d. Buffaloes

6. The recommended measure for the eradication of sheep scrapie is:
   a. Slaughter of infected animals
   b. Destruction of familiar lines of infected sheep
   c. Improvement of genetically susceptible breeds
   d. All the above

7. Which of the following diseases is called cattle plague?
   a. Lumpy skin disease
   b. Rinderpest
   c. Foot and mouth disease
   d. Malignant catarrhal fever

8. An effective vaccine for rotavirus must induce:
   a. local immunity in intestines

b. systemic IgG
c. humoral immunity in oropharyngeal tissue
d. cell-mediated immunity in stomach

9. Infectious canine hepatitis induces:
   a. Haemagglutination inhibition (HI) antibodies
   b. Complement fixing antibodies
   c. Serum neutralizing antibodies
   d. All three types of antibodies

10. Hendra virus was transmitted to humans from:
   a. Fish
   b. Rodents
   c. Horses
   d. Swine

11. One of the major agents of Kennel cough in dogs is classified in which of the following virus families?
   a. Coronaviridae
   b. Paramyxoviridae
   c. Bunyaviridae
   d. Orthomyxoviridae

12. Transmissible gastroenteritis in pigs is caused by:
   a. A lentivirus
   b. Coronavirus
   c. Parvovirus
   d. Myxovirus

13. Transmissible encephalopathy in sheep is clinically characterized by:
   a. Ascending paralysis
   b. Tremors
   c. Gait abnormalities
   d. Circling
   e.

14. The method recommended in the elimination of prions from the carcass is:
   a. Disinfection with 5% phenol
   b. Incineration
   c. Gamma irradiation
   d. None of the above
   e.

15. In foot and mouth disease the amplifier hosts are:
   a. Pigs
   b. Elephants
   c. Buffaloes
   d. Wild ruminants

16. Which of the following genera is responsible for Chicken Infectious Anemia?
    a. *Orthoburnyavirus*
    b. *Circovirus*
    c. *Phlebovirus*
    d. *Gyrovirus*

17. Indicate the principal site of replication of the Avian Reovirus in the host.
    a. Central nervous system
    b. Enteric tract
    c. Spleen
    d. Kidney

18. Which of the following species is asymptomatic when infected with Eastern Equine Encephalitis virus?
    a. Horses
    b. Poultry
    c. Human
    d. Jaguar

19. From the following diseases indicate which should not be put in differential diagnosis with the Infectious Bursal Disease (Gumboro):
    a. Infectious bronchitis
    b. Avian Influenza
    c. Marek's disease
    d. Newcastle disease

20. Bovine herpesvirus 1 often targets the:
    a. Lung
    b. Liver
    c. Brain
    d. Upper respiratory tract

21. The "natural" host of pseudorabies virus is:
    a. Dogs
    b. Cattle
    c. Sheep
    d. Swine

22. The reservoir of malignant catarrhal fever virus in Africa and in countries outside of Africa are:
    a. Birds and Rodents
    b. Mosquitos and Tse-tse flies
    c. Springbok and White-tailed deer
    d. Wildebeest and Sheep

23. Which of the following is NOT a reportable/ notifiable disease in Namibia?
    a. Pseudorabies
    b. Malignant Catarrhal Fever

c. Lumpy skin disease
d. Avian encephalomyelitis

24. Parvoviruses:
a. Can be easily killed by all common disinfectants.
b. Can survive extremely well outside their hosts and remain infectious for weeks to months.
c. Cause more severe disease in older animals, as the majority of young animals are protected by maternally-derived antibodies.
d. Do not induce strong immune responses.

25. Rabid dog in dump form:
a. Always bites
b. Often bites
c. Seldom bites
d. Never bites

SECTION B. TRUE/FALSE AND FILL IN THE BLANKS QUESTIONS **[30 MARKS]**

QUESTION 1. Indicate whether the statement is TRUE or FALSE **[20 marks, 1 mark each]**

(a) Unlike in humans, sexual contact is not a major means of transmission of feline immunodeficiency virus infection among cats.
(b) Bovine Viral Diarrhoea (BVD) is a virus that belongs to the Pestivirus family.
(c) Dogs recovered from canine hepatitis virus produce lifelong immunity.
(d) The Infectious Bursal Disease virus is a member of the Avibirnavirus genus within the Birnaviridae family.
(e) Viruses that are members of the Bunyaviridae family are transmitted by arthropods.
(f) The Equine Encephalosis virus penetrates into the host organism through the bite of a culicoides
(g) Rift Valley fever is an important emerging, mosquito-borne zoonotic disease affecting horses.
(h) Porcine Circovirus can remain infectious in the environment at high ambient temperatures.
(i) The main source of Bovine Viral Diarrhoea spread is through persistently infected (PI) animals.
(j) All animals, including primates, are either not susceptible to Crimea Congo Haemorrhagic Fever (CCHF) or have only a slight infection.
(k) Getah virus is a mosquito-borne arbovirus in the *Alphavirus* genus.
(l) Border Disease is a congenital viral infection causing female infertility, abortion, stillbirth, and small weak lambs.
(m) Wesselsborn disease has an incubation period in small ruminants of 3-6 days.
(n) Bluetongue is a disease transmitted by mosquitoes.
(o) Swine influenza virus does not exhibit frequent antigenic drift.
(p) An animal/human being bitten by a rabid dog will have longer incubation period, if bitten on extremities than on the face and/or head.
(q) Equine infectious anaemia virus is quite stable antigenically.
(r) In swine, the important consequence of parvovirus infection is foetal death.

(s) The term "arbovirus" indicates a viral characteristic associated with being insect-borne.

(t) Equine arteritis virus can be transmitted through artificial insemination with fresh-cooled or cryopreserved semen.

QUESTION 2. Fill in blanks questions **[10 marks]**

(a) Two possible mechanisms of cellular injury by a virus are ..... and .....

(b) Two DNA viruses associated with feather loss in birds are members of the genus ..... and .....

(c) Two important cell types targeted by parvoviruses of dogs and cats are the ..... cells and ..... cells.

(d) A persistent viral infection in which NO virus shedding nor replication occurs is termed ....., while one in which virus replication and shedding continues throughout the infection is termed .....

(e) Dogs infected with infectious canine hepatitis shed virus in urine up to about ..... months

(f) Antirabies vaccination to a boy bitten by a rabid animal was first done by ..... in 1885.

SECTION C: SHORT ANSWER QUESTIONS **[25 marks]**

QUESTION 1. **[4 marks]**

Briefly describe the pathogenesis of rabies.

QUESTION 2.

Describe any two clinical signs of furious rabies in dogs. **[2 marks]**

QUESTION 3. **[3 marks]**

Client education concerning FeLV stipulates that even though a cat may be positive for the disease, it does not need to be euthanized. However, if a cat is positive some precautions must be taken; name three of such precautions.

QUESTION 4. **[4 marks]**

a. It is well-known that Namibia received an official World Organization for Animal Health (WOAH) bovine spongiform encephalopathy (BSE) negligible risk status, but Namibia must conduct a mandatory surveillance and submit a detailed report to WOAH each year. Briefly explain why? [2]

b. Which samples would you collect for the diagnosis of bovine spongiform encephalopathy? [2]

QUESTION 5. **[3 marks]**

Briefly describe the transmission of feline leukemia virus.

QUESTION 6. **[5 marks]**

a) What is the best approach to manage the African swine fever (ASF) risk of the domestic pig-tick cycle [2]

b) ASF viruses appear to persist in at least three (3) different cycles in Africa. Name the three (3) different cycles. [3]

QUESTION 7. **[4 marks]**

List the four (4) swine infectious diseases **porcine circovirus type 2 (PCV2)** has been associated with.

SECTION D: STRUCTURED QUESTIONS **[70 marks]**

QUESTION 1. **[15 marks]**

(a) Give any five (5) characteristics of the causative agent of spongiform encephalopathies. [5]

(b) In Southern Africa, the equine disease that most frequently occur is African Horse Sickness. However, equine viral arteritis (*EVA*) is found worldwide, and a horse affected by this disease can have many clinical signs. List any five (5) of these symptoms. [5]

(c) Indicate any five diseases that should be considered for differential diagnosis of Equine Encephalosis inhorses. [5]

QUESTION 2. **[15 marks]**

(a) Briefly describe the diagnosis of Maedi-Visna. **[5 marks]**

(b) Briefly describe the clinical signs of maedi in sheep. **[5 marks]**

(c) Indicate any five (5) of the most common clinical signs reported in FeLV progressive symptomaticcats. **[5 marks]**

QUESTION 3.

FMD causes few mortalities in farm animals. Discuss why it is important to control this disease. **[10 marks]**

QUESTION 4. **[10 marks]**

(a) Name 3 important viral diseases of poultry (excluding the one in b) [3]

(b) What are the transmission methods of avian influenza in poultry? [4]

(c) In terms of pathogenicity, give the two forms of avian influenza. To which family does the causative virus of this disease belong to? [3]

QUESTION 5. **[10 marks]**

(a) Canine distemper is characterized by a variety of clinical symptoms involving almost all the bodysystems including nervous system involvement. List five (5) clinical signs of this condition. [5]

(b) Namibia has a World Organization for Animal Health Peste des Petits Ruminants free recognize zone, which is south of the veterinary cordon fence. But as in many other Southern African countries, Namibia's northern regions north of the veterinary cordon fence, there have been no official reports on PPR. However, the Directorate of veterinary services of Namibia is closely monitoring this disease as it has been reported in neighbouring Angola. Other than suspicious clinical signs, which postmortem lesions could help you to partially confirm the disease and prompt you to send samples to the laboratory for confirmatory diagnosis? [5]