

ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2012
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALIZATION PAPER for VETINERARY SCIENCE

Date	: 14 October 2012
Total Marks	: 100
Examination Time	: 150 minutes (2.5 hours)
Reading Time	: 15 Minutes (prior to examination time)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

1. Write your Roll Number clearly on the Answer Booklet in the space provided.
2. The first 15 minutes is being provided to check the number of pages, printing errors, clarify doubts and to read the instructions. You are NOT PERMITTED TO WRITE during this time.
3. Use either Blue or Black ink pen or ball point pen for the written part and Pencils for the sketches and drawings.
4. All answers should be written on the Answer Booklet provided. Candidates are not allowed to write anything on the question paper or any other materials.
5. This paper is divided into two Parts-namely Part A and Part B.
6. PART A consists of two Sections: Section I and Section II.

Section I consists of 30 Multiple-Choice Questions carrying one (1) mark each and is compulsory. The answer of your choice should be clearly written in whole along with the question and option number on your answer booklet. Eg. 31(c).

Section II consists of four (4) short answer questions of five (5) marks each and all questions are compulsory.

7. PART B consists of two Case Studies. Choose only ONE case study and answer the questions under your choice. Each case study carries fifty (50) marks in total.
8. This Paper consists of TEN (10) pages including this Instruction page.

Part A

Section I: Multiple Choice Questions (30 marks)

Choose the correct answer and write down the letter of the correct answer chosen in the Answer Sheet against the question number. E.g. 31 (c). Each question carries ONE mark.

1. The acronym for the World Organization for Animal Health is:
 - a. WHO
 - b. OIE
 - c. SPSS
 - d. WMO

2. Following the global declaration of freedom from Rinderpest disease, the world organization for animal health has targeted elimination of high impact animal diseases, which are:
 - a. Johne's disease, Salmonellosis, Anthrax and Swine fever
 - b. Fascioliasis, Listeriosis, Ringworm and Black Quarter
 - c. Foot and Mouth Diseases, Peste des Petits Ruminants, Brucellosis and Rabies
 - d. Bluetongue, Strangles, Tetanus and Toxoplasmosis

3. In the Livestock legislation; the Animal diseases which are legally required to be reported are called as:
 - a. Endemic diseases
 - b. Emerging diseases
 - c. Exotic diseases
 - d. Notifiable diseases

4. The first outbreak of Avian Influenza (H5N1) in Bhutan occurred in the year:
 - a. 2005
 - b. 2006
 - c. 2010
 - d. 2008

5. The procedure used for dog population management and rabies control project in Bhutan is:
 - a. Impounding of dogs
 - b. Catch, Neuter, Vaccinate and Release
 - c. Extermination of dogs
 - d. Translocation of dogs

6. The World Rabies day is celebrated on one of the following date of every year:
- 27th September
 - 28th September
 - 28th July
 - 28th October
7. Parasitic infections commonly observed in the yak population of Bhutan are:
- Fascioliasis and Strongylus vulgaris
 - Trichuris spp and Pinworms
 - Gid (Tapeworm) and Warble fly (Hypoderma)
 - Coccidia and Giardia
8. Dairy farmer groups around Thimphu and Paro are currently selling fresh milk to Thimphu city. It is important to educate the public as consumption of fresh milk without pasteurization can transmit following disease/s:
- Black quarter
 - Bovine Virus Diarrhoea
 - Infectious Bovine Rhinotracheitis
 - Bovine Tuberculosis, Brucellosis, Rabies and Anthrax
9. The numbers of pet owners in Thimphu are increasing every year. As a veterinarian we need to advice especially the pregnant women because one of the following diseases can spread through the urine of dogs and cause abortion:
- Leptospirosis
 - Actinomycosis
 - Brucellosis
 - Lymes disease
10. Migratory waterfowl are considered as an important source of poultry viral infection of which of the following disease:
- Infectious bronchitis
 - Avian Influenza
 - Newcastle disease
 - Avian Encephalomyelitis

11. A concept that is gaining global momentum in preventing epidemic or epizootic disease and for maintaining ecosystem integrity is called:
- Public and Ecosystems Health
 - One World One Health
 - Environment and Natural Health
 - Human and Wild Life Health
12. Four major animal diseases that has topped the International Zoo-Sanitary agenda over the last few years were:
- Tuberculosis, Brucellosis, Anthrax and Black Quarter
 - Avian Influenza, Bovine Spongiform Encephalopathy, FMD and Rabies
 - Johne's disease, Coccidiosis, Rinderpest and Bluetongue
 - Mastitis, Salmonellosis, Gumboro and Newcastle disease
13. Which of the following bovine species is primarily reared as meat animal by tribal people of North-Eastern India but used in Bhutan for production of hybrids for dairy and draught purpose:
- Bos frontalis*
 - Bos gaurus*
 - Bos grunniens*
 - Bubalus bubalis*
14. An appropriate animal reproduction option for Bhutan that can "concentrate breeding and calving periods" to match fodder availability could be:
- Introduction of sexed semen
 - Estrus synchronization
 - Embryo transfer
 - Cloning
15. Which of the following bovine /cattle types is the most preferred draught animal for ploughing Agriculture land in Bhutan:
- Jersey crossbred bullock (Jersey x indigenous Thrabum)
 - Jatsa (F1 hybrid male of Mithun x indigenous Thrabum)
 - Indigenous Nublang bullock
 - Brown Swiss crossbred bullock (Brown Swiss x indigenous Thrabum)

16. Which one of the following farming system in Bhutan offers immediate potential for organic livestock production:

- a. Commercial dairy farming
- b. Traditional yak farming
- c. Commercial poultry farming
- d. Commercial pig farming

17. Which of the following livestock species is losing economic competitiveness and undergoing fast population decline in Bhutan:

- a. Goat
- b. Cattle
- c. Poultry
- d. Sheep

18. Which of the following fish species is highly carnivorous and it is currently not promoted in Bhutan as its large-scale introduction is feared to impact on indigenous fish population:

- a. Tilapia
- b. Grass carp
- c. Trout
- d. Mahseer

19. A popular winter fodder crop widely adopted by the dairy farmers in Bhutan is:

- a. Oat
- b. Maize
- c. Barley
- d. Sweet Buckwheat

20. An important development strategy used for promotion of livestock enterprise in Bhutan is:

- a. Contract Farming
- b. Formation of farmers groups and co-operatives
- c. Foreign Direct Investment
- d. Large-Scale Intensification

21. If our pet dog or cat has a circular spot on its skin, what infection are we most likely to get through its contact?
- Tapeworm
 - Ringworm
 - Pinworm
 - Roundworm
22. The Department of Livestock, Bhutan spends majority of annual expenditures for which category of veterinary drugs, medicines or vaccines:
- Antibiotics
 - Ecto and Endo-parasitic drugs
 - Vaccines
 - Hormonal drugs
23. A highly contagious disease of horses characterized by the swelling of the lymph nodes under the jowl and around the throatlatch area is:
- Strangles
 - Equine colic
 - Pink eye
 - Lockjaw
24. Major difference between swine flu (H1N1) and bird flu (H5N1) is:
- H1N1 causes higher mortality in humans compared to H5N1
 - H1N1 spreads rapidly from person to person compared to H5N1
 - H1N1 is Influenza type A virus while H5N1 is Influenza Type B virus
 - H5N1 is zoonotic disease while H1N1 is not a zoonotic disease
25. A farmer reports that his jersey cow has calved two days ago and is lying in a recumbent position with her head tucked into her flank. What is your diagnosis?
- Botulism
 - Milk fever
 - Mastitis
 - Tetanus

26. An apex body for coordination of animal health activities in Bhutan is:
- Livestock Central Store, Phuntsholing
 - Regional Livestock Development Centre, Tsimasham
 - National Centre for Animal Health, Serbithang
 - National Animal Hospital, Chubachu
27. Rabies outbreak in Bhutan is frequently observed in one of the following geographical areas:
- Areas bordering Tibet, P.R China in the North
 - Areas bordering India in the South
 - East central Bhutan of Bumthang and Trongsa
 - Western central Bhutan of Punakha and Wangdiphodrang
28. A cow has died suddenly with un-clotted bloody discharge from the nose, mouth and other openings. Which one of the following is the most likely disease?
- Campylobacteriosis
 - Ketosis
 - Anthrax
 - Johne's disease
29. A drug of choice for treatment of a sarcoptic mange in dog is:
- Ivermectin
 - Calamine lotion
 - Betadine ointment
 - Amitraz
30. A rapid diagnostic assay employed for differential diagnosis of avian influenza from Newcastle diseases and Infectious bronchitis is:
- Hemagglutination-Inhibition test
 - Real Time Reverse Transcription-Polymerase Chain Reaction
 - Enzyme-Linked Immuno Sorbent Assay
 - Agar gel immunodiffusion test

PART A

Section II: Short questions (Answer all 4 questions)

20 marks

1. A two and half year old female Apsoo dog is presented to you with a history of panting, restlessness, anxiety, drooling and clamping of the jaws, stiff gait and staggering. The owner informs you that her dog gave birth to four active and healthy pups two weeks ago. On physical examination, you notice that the dog is unable to rise and the head and neck are extended with twitching of the local muscles and frequent convulsions. The pupils are dilated and body temperature is elevated (41.5°C).
 - a. What is the disease condition in question? (1 mark)
 - b. Mention two synonyms for the above disease. (1 mark)
 - c. What causes the disease? (1 mark)
 - d. How would you treat this disease? (1 mark)
 - e. What advice would you give to the owner to prevent this disease if owner wishes to breed again? (1 mark)

2. A farmer had performed “Rimdro” (Puja) in his house two days ago. All leftover food and “Torma” made of wheat flour during puja were fed to his cow. Next morning, the farmer noticed that his cow refused to eat and appeared dull with distended abdomen. Immediately, the farmer called you to attend to his cow’s illness. On physical examination, you have observed that the rumen is distended and showed atony of rumen with increased pulse and respiratory rates, sunken eye and loss of dermal elasticity.
 - a. In your opinion, what could be the disease condition of cow? (1 mark)
 - b. What laboratory tests would you perform to confirm your diagnosis? (1 mark)
 - c. What is your first line of treatment and explain the rationale behind your treatment? (1 mark)
 - d. What is your prognosis for this case and why? (1 mark)
 - e. What advice would you give to the farmer to prevent this disease condition in future? (1 mark)

3. A farmer presented to you the laboratory result of the faecal examination of his cattle and one of his heifers had a worm load of 900 EPG of *Strongyloides*. The Parasitologist from NCAH had recommended Fenbendazole. The body weight of the heifer is 150 kg and Fenbendazole available at your clinic is 25% w/w powder. The dose rate of Fenbendazole is 5 mg per kg bodyweight.
- How much Fenbendazole powder would you give to this heifer? (1 mark)
 - What advice would you give to this farmer after giving Fenbendazole to his heifer? (1 mark)
 - Is Fenbendazole indicated for liver-fluke? If so, what is the dosage? (2 marks)
 - Mention other benzimidazoles available in our Animal Health Centres in Bhutan. (1 mark)
4. You are posted as a Veterinary Officer at the Dzongkhag Veterinary Hospital (DVH), Paro. One day, a farmer from Kichu calls you and request you to attend to an emergency case. On arrival to farmer's house, you notice that the cow had distension of rumen especially in the upper left flank. The cow is in discomfort, get up and lie down frequently, kicking at the belly. Dysnoea is marked and accompanied by mouth breathing, protrusion of tongue, salivation and extension of the head. The farmer informs you that his two cows were busy eating apples from the basket two hours ago. On physical examination, you notice an apple lodged inside the oesophagus at the mid level of the neck.
- What is the name of the disease condition? (1 mark)
 - What emergency procedure would you undertake to save the life of this cow? (1 mark)
 - What non-surgical method would you do to remove the apple from the oesophagus? (1 mark)
 - Incase if you fail to remove the apple from oesophagus by non-surgical method, what surgical operation would you undertake? Briefly explain the surgical operation? (2 marks)

PART B

Two Case studies (Answer only One question)

50 marks

1. You are posted as Veterinary Officer at the Satellite Veterinary Laboratory at Phuntsholing. One day, you are called by the Livestock Extension Officer of Pasakha to diagnose the disease condition affecting three cows belonging to Mr. Padam Gurung. On arrival, you observe that all three cows have typical lesions in mouth and foot, highly suggestive of Foot and Mouth Disease (FMD).
 - a. What are the FMD serotypes prevalent in Bhutan? Among these serotypes which is the most predominant? (10 marks)
 - b. What samples would you collect for confirmation of the disease? Mention the preservative used for preserving and transportation of FMD samples.(5 marks)
 - c. Describe the modes of transmission of FMD. (10 marks)
 - d. Describe how will you prevent and control the disease from spreading to other villages and bordering Dzongkhags.(25 marks)

Or

2. You are posted at Dzongkhag Veterinary Hospital, Samdrupjongkhar and one day a farmer from nearby village request you to check and examine one of his milking cow who is exhibiting abnormal behaviors. Once you reached the farmer's house, you notice drooling of saliva, alert appearance with ear held erect and starring eyes in this cow. The cow is sensitive to sound and movement with incoordinated gait. All these signs and symptoms made you think that this is a rabid cow. The cow eventually died after 3 days of your visit and again the farmer requested your service.
 - a. What sample would you collect for the laboratory examination to confirm your diagnosis? (5 marks)
 - b. What are the tests for laboratory confirmation of rabies? (5 marks)
 - c. What advice would you give to this farmer and his family members who had either handled this cow or consumed milk from this cow? (5 marks)
 - d. Describe the modes of transmission of rabies. (10 marks)
 - e. Describe the prevention and control measures of rabies adopted in Bhutan.(25 marks)