

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2022
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALISATION PAPER FOR VETERINARY SCIENCE

Date	: October 9, 2022
Total Marks	: 100
Writing Time	: 150 minutes (2.5 hours)
Reading Time	: 15 Minutes (prior to examination time)

GENERAL INSTRUCTIONS:

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A & SECTION B:
 - **SECTION A** has two parts: Part I - 30 Multiple Choice Questions
Part II - 4 Short Answer QuestionsAll questions under SECTION A are COMPULSORY.
 - **SECTION B** consists of two Case Studies. Choose only **ONE** case study and answer the questions of your choice.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating the correct Section, Part and Question Number will NOT be evaluated and no marks will be awarded.
6. Begin each Section and Part in a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. **You must hand over the Answer Booklet to the Invigilator before leaving the examination hall.**
10. This paper has **7 printed pages**, including this instruction page.

GOOD LUCK

SECTION A

PART I: Multiple Choice Questions [30 marks]

Choose the correct answer and write down the letter of your chosen answer in the Answer Booklet against the question number e.g. 31 (d). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. Lodgement site of renal calculi:
 - a) Gall bladder
 - b) Urinary tract
 - c) Gastrointestinal tract
 - d) Vertebral column

2. In veterinary medicine, what does the term “pathognomonic” means:
 - a) Pathology of lung
 - b) Classification of pathology
 - c) Signs and lesions specifically indicating to a particular disease
 - d) Pathology of gonads

3. Giardiasis is the parasite of
 - a) integumentary system.
 - b) gastrointestinal system.
 - c) circulatory system.
 - d) respiratory system.

4. Which is the gold standard test for laboratory diagnosis of rabies?
 - a) Rapid antigen test
 - b) Fluorescent antibody test
 - c) Antibody ELISA
 - d) Mice inoculation

5. Which is the appropriate site for blood collection in chicken?
 - a) Wing vein
 - b) Jugular vein
 - c) Femoral vein
 - d) Caudal vein

6. Which one of the following is the most effective anthelmintic for treatment of Fascioliasis in cow?
 - a) Fenbendazole
 - b) Albendazole
 - c) Praziquantel
 - d) Triclabendazole

7. Plant that causes photosensitization in cattle when ingested _____.
 - a) Tall fescue
 - b) Ficus
 - c) Lantana camara
 - d) Lucerne

8. Which is the antineoplastic drug of choice in treating early stage of canine transmissible venereal tumour?
- Lomustine
 - Vincristine
 - Bendamustine
 - Carmustine
9. Which is the causative agent for Glanders in horse?
- Streptococcus equi
 - Burkholderia mallei
 - Staphylococcus aureus
 - Staphylococcus epidermis
10. Flunixin meglumine is a:
- Neurolept analgesic
 - Narcotic analgesic
 - Non-steroidal anti-inflammatory drug
 - Cardiovascular stimulant drug
11. What is the drug of choice for treatment of Haemorrhagic Septicaemia in cattle?
- Streptopenicillin
 - Gentamycin
 - 33.3% Sulphadimidine inj.
 - Erythromycin
12. According to Livestock Rules and Regulations 2017, animal diseases required to be reported to animal health authority are called:
- Infectious disease
 - Transmissible disease
 - Notifiable diseases
 - Contagious disease
13. When was avian influenza - H5N1 first reported in Bhutan?
- 2005
 - 2010
 - 2015
 - 2020
14. World rabies day is observed on _____.
- 28 August
 - 28 September
 - 28 October
 - 28 November
15. It is important to pasteurize milk because it may carry which of the following zoonotic agent?
- Clostridium organism
 - Escherichia organism
 - Brucella organism
 - Pseudomonas organism

16. Drug of choice in the treatment of mange in dog is:
- Iodine solution
 - Ivermectin
 - Calamine lotion
 - Rectified spirit
17. Appropriate sample for diagnosis of rabies in dog is:
- Saliva
 - Brain
 - Blood
 - Urine
18. Nucleated RBCs are seen in the blood of which species?
- Cattle
 - Horse
 - Dog
 - Chicken
19. Acid indigestion in cattle is effectively treated with _____.
- sodium chloride
 - sodium bicarbonate
 - sodium carbonate
 - sodium citrate
20. Which of the following is not the serotype of FMD virus?
- Serotype A
 - Serotype B
 - Serotype C
 - Serotype O
21. Which of the following animals serve as a source of *Trichinella* spp. infection?
- Cattle
 - Dogs
 - Wild pigs
 - Poultry
22. Diminazene aceturate is an:
- Analgesic
 - Antipyretic
 - Antiprotozoal
 - Antibiotic
23. Oedematous bursa of fabricious in chicken is the typical PM lesions seen in:
- Newcastle disease
 - Marek's disease
 - Avian leukosis
 - Infectious bursal disease

24. Paracetamol toxicity is common in which one of the following animal species?
- Bovine
 - Equine
 - Feline
 - Canine
25. Which one of following was withdrawn from veterinary practice due to adverse health impact on wildlife species, particularly in vultures?
- Meloxicam
 - Diclofenac sodium
 - Naproxen sodium
 - Ibuprofen
26. Accumulation of fluid in scrotum is:
- Ascites
 - Hydrocele
 - Oedema
 - Dropsy
27. Common viral disease reported in goats in Bhutan _____.
- CCHF
 - PPR
 - Blue tongue
 - Akabane
28. Alexander Fleming discovered which one of the following?
- Tetracycline
 - Gentamicin
 - Penicillin
 - Erythromycin
29. Which is the choice of drug for the treatment of tapeworm?
- Triclabendazole
 - Piperazine
 - Praziquantel
 - Oxyclozanide
30. *Coxiella burnetii* is the causative agent of:
- Ephemeral fever
 - Q fever
 - Heartwater
 - Shipping fever

PART II – Short Answer Questions [20 marks]

This part has 4 Short Answer Questions. Answer ALL the questions. Each question carries 5 marks. Mark for each sub-question is indicated in the brackets.

1. Bhutan maintains the list of notifiable animal diseases which is regularly updated.
 - a) What are three diseases recently included in the list of official notifiable diseases? **(3 marks)**
 - b) Name two other notifiable animal diseases **(2 marks)**
2. Gid is a parasitic infection in yak. **(5x1=5 marks)**
 - a) Name the parasite.
 - b) Name the intermediate stage of this parasite.
 - c) Name the final host of this parasite.
 - d) Name one drug for its treatment.
 - e) Susceptible age of yak.
3. Antimicrobial resistance (AMR) is seriously considered as an imminent threat to public and animal health.
 - a) What are the main causes of AMR? **(3 marks)**
 - b) There is a project currently being implemented in Bhutan to mitigate AMR in both Human and Animal health sector. Name the project and the funding source. **(2 marks)**
4. A horse is presented to you with mucopurulent discharge from nose along with finely chewed grass, swollen submandibular lymph node that is painful on touch and febrile condition.
 - a) What is your diagnosis and causative agent? **(2 mark)**
 - b) What is your line of treatment? **(3 marks)**

SECTION B: Case Study [50 marks]

Choose either Case I OR Case II from this Section. Each case carries 50 marks. Mark for each sub-question is indicated in the brackets.

CASE I

A farmer reports to you about a cow with dystocia and seeks your help. You have visited the farmer and inspected the cow. After inspection you decided to perform caesarean section on the cow. Answer the following questions related to inspection, surgery and other care.

1. What are the important details you would collect from the farmers about the cow with dystocia? **(5 marks)**

2. What are the important details you would record from the inspection of the cow? **(5 marks)**
3. Describe the processes in sequential manner:
 - a) Preparation for surgery **(10 marks)**
 - b) Surgery **(20 marks)**
 - c) Post-surgery care **(10 marks)**

CASE II

Foot and Mouth Disease (FMD) is one of the most economically important diseases in Bhutan that affects the cloven-footed animals and have serious socio-economic implications. As about 90% of the Bhutanese livestock farmers rear cattle for their sustenance and income. The government accords high importance to its prevention and control. Therefore, as a government veterinarian you are required to spearhead the FMD prevention and control program in accordance to the National FMD control plan. In this context answer the following questions.

1. Describe in detail the clinical signs and morbidity patterns observed in a population of cattle affected with FMD. **(10 marks)**
2. Describe in detail the types of samples that you would collect including the preservatives for laboratory confirmation of the disease. Also comment on the laboratory diagnostic tests available (with test principles) both in the field and at the National Centre for Animal Health, Serbithang to confirm the disease. **(15 marks)**
3. Comment on the types of serotypes of FMD virus prevalent globally and the common serotypes identified in Bhutan. **(5 marks)**
4. Of all cloven-hoofed species in Bhutan, which species play an important role in the transmission of FMD in Bhutan. Explain the reasons. **(5 marks)**
5. Describe FMD vaccination schedule in both endemic and non-endemic areas of Bhutan. **(5 marks)**
6. Compare and contrast the control measures undertaken in the event of an outbreak of FMD in an endemic country such as Bhutan versus an FMD-free country such as the UK. **(5 marks)**
7. In spite of the prevention and control measures undertaken, FMD continues to occur in the country. What are the possible factors that pose major challenges in the prevention and control of FMD in Bhutan? **(5 marks)**

TASHI DELEK