

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2020
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALISATION PAPER FOR VETERINARY SCIENCE

Date	: February 27, 2021
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 being provided to check the number of pages of the 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 Questions
All 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 on 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 **8 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. Every year around the world, the World Rabies Day (WRD) is observed on
 - a) August 28
 - b) September 28
 - c) October 28
 - d) November 28

2. Commonly used agent in dogs for the treatment of mange caused by Demodex mange is
 - a) Mebendazole
 - b) Praziquantal
 - c) Ivermectin
 - d) Piperazine

3. Which parasite should you control to prevent Gid disease in yak?
 - a) Taenia saginata
 - b) Taenia multiceps
 - c) Taenia hydatigera
 - d) Taenia multilocularis

4. Which one of the following is the common viral disease that affects goat?
 - a) Newcastle disease
 - b) Peste des petit ruminant
 - c) Distemper
 - d) Infectious bovine rhinotracheitis

5. Humane and internationally accepted process of making animal unconscious to reduce pain during slaughter is by using
 - a) Stun gun
 - b) Bullets from gunshot
 - c) Hanging
 - d) Axing

6. An adult cow behaves like a bull, shows enhanced sexual behaviour, mounts on other cows and comes back to heat time again. What is the condition called?
 - a) Silent heat
 - b) Pica
 - c) Anoestrus
 - d) Follicular cyst

7. Milk fever in recently calved high yielding cow is caused by
 - a) increased body temperature.
 - b) decreased blood magnesium.
 - c) decreased blood calcium.
 - d) decreased blood cobalt.

8. Who discovered penicillin?
 - a) Gerhard Domagk
 - b) Robert Coghill
 - c) Howard Florey
 - d) Alexander Fleming

9. What does AMR stand for in terms of an antimicrobial not able to treat an infection that was treatable earlier with the same antimicrobial?
 - a) Antimicrobial residue
 - b) Anamnestic records
 - c) Amplified residue
 - d) Antimicrobial resistance

10. What is the drug of choice for treatment of Haemorrhagic Septicaemia (Pasteurellosis) in cattle?
 - a) Streptopenicillin
 - b) Gentamycin
 - c) 33.3% Sulphadimidine
 - d) Erythromycin

11. Which of the following animals would be the most likely to serve as a source of Trichinella spp. infection to humans in Bhutan?
 - a) Wild pigs
 - b) Cattle
 - c) Dogs
 - d) Poultry

12. The process of spreading malignant tumour cells across different organs and systems in the body is called
 - a) Transmigration
 - b) Metastasis
 - c) Haemoptysis
 - d) Benignation

13. For diagnosis of rabies in a cow, brain sample should be preserved in
 - a) 10% Formalin
 - b) absolute alcohol
 - c) 2% Citric Acid
 - d) 50% glycerol phosphate buffered saline

14. What is the gold standard test for diagnosis of rabies in animal?
- Rapid test
 - Fluorescent antibody test (FAT)
 - Enzyme linked immunosorbent assay (ELISA)
 - Polymerase chain reaction (PCR)
15. The apex body for animal health related matters in Bhutan is
- National Centre for Animal Health, Serbithang
 - National Dairy Development Centre, Yusepang
 - National Animal Hospital, Chubachu
 - Regional Livestock Development Centre, Tsimasham
16. Acronym for World Organization for Animal Health is
- FAO
 - OIE
 - WHO
 - WTO
17. Migratory water fowls are implicated for the long-distance transmission or spread of which disease?
- Infectious bursal disease
 - Avian influenza
 - Infectious bronchitis
 - Avian leucosis
18. A bacterial infection in horse characterized by swelling of submandibular lymph node, mucopurulent discharge from nose and difficulty in swallowing of feed is called
- pink eye
 - strangles
 - locked jaw
 - glanders
19. Rabies endemic areas in Bhutan are
- southern border with India.
 - north-western border with India.
 - northern border with China.
 - central part of Bhutan.
20. Which of the following is most effective treatment for early-stage canine transmissible venereal tumour (TVT)?
- Streptomycin sulfate
 - Sucralfate
 - Vincristine sulfate
 - Benzyl penicillin

21. In animal reproduction, a strategy is commonly applied to bring group of cows in heat and impregnate together so that calving occurs at the same time. This strategy is usually practised for the convenience of management. What is this strategy called?
- Use of sorted semen
 - Cloning
 - Progeny testing
 - Oestrus synchronization
22. Samples for histopathological analysis should be preserved in
- 5% formalin
 - 10% formalin
 - 15% formalin
 - 20% formalin
23. A young and healthy calf died suddenly with swelling on thigh muscle. On palpation, there is a crepitating sound. What is the disease suspected?
- Blackleg
 - Pasteurellosis
 - Enterotoxaemia
 - Tetanus
24. Major fungal toxin found in poorly manufactured and stored animal feed is
- Neurotoxin
 - Haemotoxin
 - Aflatoxin
 - Hepatotoxin
25. Which of the following leucocyte is seen in enhanced count in allergic or parasitic infection?
- Neutrophil
 - Eosinophil
 - Monocyte
 - Lymphocyte
26. Which of the following disease is transmitted by ticks?
- Pasteurella
 - Salmonella
 - Trichinella
 - Crimean-Congo Haemorrhagic Fever
27. Which of the following parasitic disease spread in humans is associated with free-roaming dogs and contaminated vegetables?
- Echinococcus
 - Taenia taeniaeformis
 - Raillatenia
 - Taenia multiceps

28. Traumatic reticulo pericarditis (TRP) in cattle involves which of the following organs?
- Rumen-reticulum-omasum-abomasum
 - Rumen-reticulum-omasum-diaphragm
 - Reticulum-diaphragm-heart
 - Diaphragm and heart
29. What is the choice of drug for deworming dogs against tapeworm?
- Praziquantel
 - Triclabendazole
 - Piperazine
 - Oxyclozanide
30. A recent spread of a cattle disease in India and also reported for the first time in Bhutan, that affects integumentary system is
- Warble
 - Ringworm
 - Lumpy skin disease
 - Mange

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.

- Write the full form of abbreviation in the question:
 - If RNA is ribonucleic acid and DNA is deoxyribonucleic acid, what is TNA? (1 mark)
 - If PCR is polymerase chain reaction, what is RT-PCR? (1 mark)
 - If AMR is antimicrobial resistance, what is AST? (1 mark)
 - If RDT is rapid diagnostic test, what is LFA? (1 mark)
 - If SBA is sheep blood agar, what is SDA? (1 mark)
- Some poultry birds of age 6 weeks died in a farm with haemorrhages in major muscles such as breasts and thigh in addition to swollen and oedematous bursa.
 - What is the disease suspected? (1 mark)
 - What is another name for this disease? (1 mark)
 - What is the best method to control this disease? (1 mark)
 - What would you advise to the owner of the farm? (1 mark)
 - Other than clinical signs and post-mortem findings, what laboratory test will you use to diagnose this disease? (1 mark)

3. Faecal samples from a cow from paddy cultivation area is examined at parasitology laboratory. The laboratory findings are 1000 EPG of Fasciola.
 - a) What drug and dose will you recommend to treat Fasciola in cow? (2 marks)
 - b) What advice would you recommend for management of Fasciola at farmers level? (2 marks)
 - c) Name two species of Fasciola. (1 mark)

4. Macrolides class of antibiotics are commonly used in upper respiratory infection.
 - a) Name two commonly used macrolides class of antibiotics. (1 mark)
 - b) Describe the mode of action of macrolides. (3 marks)
 - c) Name two bacterial infection for which macrolides are indicated. (1 mark)

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

In an established commercial poultry farm, about 20% of the layer birds died due to infectious disease outbreak. The outbreak was reported to the veterinary authority and investigation found the involvement of Newcastle disease. Answer the following questions in the investigation process:

1. Describe the details of Clinical investigation. The Clinical investigation should include description on clinical signs and symptoms of sick bird, post-mortem findings from dead birds and any other clinical information. (10 marks)

2. Describe the details of Epidemiological investigation. The Epidemiological investigation should include description on: (10 marks)
 - a) Farm location, Residential population around the affected farm, Records of other farms around the affected farm, Number of birds in affected farm, Numbers died, Numbers at risk and Source of stock.
 - b) History of similar outbreak in the past, History of vaccination and Any other epidemiological information.

3. Describe the details of Laboratory investigation. The Laboratory investigation should include descriptions on: (15 marks)
 - a) Sample collection-various samples
 - b) Sample packing
 - c) Sample transport
 - d) Sample testing at laboratory - various tests
 - e) Test diagnosis and interpretation

4. Describe in details the different control measures to control such outbreak including vaccination and farm biosecurity. (15 marks)

CASE II

A female dog is brought to you for surgery – ovariohysterectomy. With a team at Veterinary Hospital, you have completed the surgery. Describe the process starting with pre-surgery consultation to post surgery advice.

1. Describe the process of taking appointment and the advice you provide to the owner to prepare the dog for surgery. (5 marks)
2. Describe the process of pre-anaesthesia and anaesthesia including anaesthetic drug and dose. (15 marks)
3. Describe the process of removing ovary and uterus. (20 marks)
4. Describe the post-surgery care. (10 marks)

TASHI DELEK