

**PREPARATION FOR THE EXAMINATION
SAVC REGISTRATION EXAMINATION
VETERINARY TECHNOLOGISTS - 2018**

Introduction

The South African Veterinary Council (SAVC) registration exam is open to foreign candidates who hold an equivalent qualification to Veterinary Technology and wish to be employed in South Africa. Preparation for the examination should be extensive, thorough and in detail. The following document is a guide to potential candidates on how to prepare themselves for the examination to optimise their chances of passing.

Structure of the examination

The examination consists of a Computer Based Examination (CBE) and a practical examination.

To do well in the examination, the following information may help:

- Read the questions properly;
- Read all the choices of multiple choice questions before you answer;
- There is no guessing penalty in the examination, therefore if you do not know the answer, always take an educated guess;
- Do not change your answer unless you misread the question. Your first choice is often the correct choice;
- A positive choice is more likely to be true than a negative one;
- Usually the correct answer is the choice with the most information.

Thorough preparation on the theoretical component as well as the practical aspect is very important for the examination.

Study material

- A list of the handbooks that could be used for preparation as well as a scope for each subject are listed below.
- Veterinary and veterinary para-profession related legislation can be accessed at: www.savc.org.za

Subjects

PROTOZOOLOGY

One reference is: Science Bulletin No 393: Ticks, mites and insects infesting domestic animals in South Africa.

The aim of the course is to familiarise the student with the protozoal diseases of livestock that are of importance in Southern Africa. Diseases of veterinary, economic and zoonotic importance would thus be important to study.

1. Directly transmitted Infections

Gut-associated coccidia	–	Coccidiosis
Tissue-cyst forming coccidia	–	Besnoitiosis

Trichomoniasis	-	Toxoplasmosis Bovine trichomonosis
2. Vector borne infections		
Tick borne disease epidemiology		
Tick borne diseases	-	Babesiosis (Bovine, canine & equine) Theileriosis (Bovine & equine) Anaplasmosis Ehrlichiosis (Bovine & canine)
Insect borne diseases	-	Trypanosomosis

ENTOMOLOGY

Reference: Science Bulletin No 393: Ticks, mites and insects infesting domestic animals in South Africa

Introduction to ticks and mites

Specimen recovery

Identification: ticks

Argasidae	-	All species
Ixodidae	-	<i>Ixodes rubicundus</i> <i>Rhipicephalus decoloratus</i> <i>Rhipicephalus microplus</i> <i>Rhipicephalus appendiculatus</i> <i>Rhipicephalus evertsi evertsi</i> <i>Rhipicephalus sanguineus</i> <i>Haemaphysalis elliptica</i> <i>Haelomma marginatum rufipes</i> <i>Amblyomma hebraeum</i>

Identification: mites - Astigmata

		<i>Sarcoptes scabiei</i> <i>Notoedres cati</i> <i>Knemidocoptes</i> spp. <i>Psoroptes ovis</i> (NB) <i>Chorioptes</i> spp. <i>Otodectes cynotis</i>
-Mesostigmata		<i>Dermanyssus gallinae</i>
-Prostigmata		<i>Demodex canis</i> <i>Psorergates ovis</i>

Ectoparasite control on domestic stock

Integrated control of ectoparasites on domestic stock

Diptera

Ceratopogonidae	-	<i>Culicoides</i>
Culicidae	-	<i>Anopheles</i> , <i>Aedes</i> & <i>Culex</i>
Oestridae	-	<i>Oestrus ovis</i>
Muscidae	-	<i>Stomoxys calcitrans</i>
Glossinidae	-	<i>Glossina</i> spp
Calliphoridae	-	<i>Lucilia cuprina</i> & <i>Chrysomya bezziana</i>
Siphonaptera		
Pulicidae		<i>Ctenophalides canis</i> & <i>C. felis</i>
Phthiraptera		Importance & control of lice

HELMINTHOLOGY

Identification of parasitic helminths on the grounds of diagnostic characteristics. The life cycle of helminths and prevention and control measures. Recognition and pathology of disease, Laboratory techniques.

MOLECULAR BIOLOGY

- Brown TA 1986 / Brown TA 1995 3rd edition Gene cloning - An introduction.
- Operation manual of kits / information sheets - lab documentation
- Internet
- Molecular Biology CD of Tropical Diseases

Basic molecular biology (Practical and Theory Knowledge):

The candidate will be expected to understand the basic principles of PCR, cloning, sequencing and phylogenetic analysis in a diagnostic environment.

IMMUNOLOGY AND SEROLOGY

- Immunology, Ivan Roitt, Jonathan Broshoff, David Male, 2001.
- Veterinary Immunology - An introduction, Ian Tizard
- Microbiology; L.M. Prescott, J.P. Harley & D.A. Klein. 7th Edition Chapter: 31, 32, 35 (p 875-883), 36 (p 900 – 905)

Specific and non-specific immunity. Antigens, Antibodies, Immune Response, Antigen-antibody reactions. Cellular and humoral immunity. Serological techniques. Vaccines. (Practical and Theory Knowledge)

MICROBIOLOGY

- Internet
 - Microbiology; L.M. Prescott, J.P. Harley & D.A. Klein. 7th Edition
 - Pathogenicity of microorganisms
 - Antimicrobial Chemotherapy
 - Clinical Microbiology (practical aspects and techniques)
 - Epidemiology of Infectious Diseases
- Most important bacterial diseases of veterinary importance: *Staphylococcus*, *Streptococcus*, *Clostridium*, *Bacillus*, *Escherichia*, *Salmonella*, *Pasteurella*, *Campylobacter*, *Brucella*, *Mycobacterium*, *Dermatophilus*, *Leptospira*, *Mycobacterium*
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HAEMATOLOGY

- Essential Haematology, AV Hoffbrand, JE Pettit and PAH Moss (Blackwell Science)
- Haemopoiesis
- Stromal cells
- Red cells
- Red cell membrane
- Red cell metabolism

- Haemoglobin synthesis
- Red cell nutrients – iron, B12, folic acid
- White blood cells (Neutrophils, Eosinophils, Basophils, Monocytes, B, T – cells, NK cells)
- Morphology
- Functions
- Coagulation
- Vasoconstriction
- Platelets
- Coagulation cascade
- Fibrinolysis
- Practicals
- Anticoagulants in Haematology
- Haemoglobin concentration
- Red cell indices
- Making and staining of blood smears
- Electronic cell counters – principles
- Normal ranges for animals (dog, sheep, cow, horse, pig, cat): white cells, red cells, haematocrit, haemoglobin, coagulation time, ESR

VIROLOGY

- Microbiology; L.M. Prescott, J.P. Harley & D.A. Klein. 7th Edition Chapter: 16, 18, 33 (p 818-819), 35 (p 873 – 884), 36
- Basic Virology. 2nd Edition E.K. Wagner & M.J. Hewlett

The candidate must be able to name all virus families of veterinary importance, and the way of replication in the host. Understanding and application of all techniques used in a viral diagnostic laboratory. Cultivation of viruses. General pathogenesis. Vaccines.

TOXICOLOGY

Poisonous plants, Mycotoxicoses, Mineral, Inorganic and Organic poisons

To cover the following systems:

- Cardiovascular
- Liver
- CNS
- GIT
- Urogenital system
- Respiratory system
- Haemopoietic system
- Skin
- Skeletal

BIOCHEMISTRY

Laboratory Procedures for Veterinary Technicians – Paul W Pratt VMD

Tietz Textbook of Clinical Chemistry – Bartis Ashwood

Fundamentals of Veterinary Clinical Pathology – Steven L Stockham . Michael A Scott

The candidate will be expected to demonstrate the rationale of the basic biochemistry tests performed on patients and which organs the analyte originate from. They must also be able to demonstrate an understanding of the methods employed to generate these results, as well as sample conditions and how this affects results.

JURISPRUDENCE

- Internet and state newspaper (Government Gazette) (Law, rules and legislation of the SAVC and profession)
- Ethics pertaining to the profession
- Accreditation and quality

Candidates must have a sound knowledge of the main laws pertaining to veterinary science and the veterinary para-professions in South Africa, viz.:

Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No 36 of 1947).

Animal Diseases Act, 1984 (Act No 35 of 1984) as amended

Medicines and Related Substances Control Act, (Act No 101 of 1965) as amended

Veterinary and Para-Veterinary Professions Act, (Act No 19 of 1982), as amended

Rules and Regulation

Meat Safety Act, 2000 (Act 40 of 2000)

Animal Improvement Act, 1977 (Act No 25 of 1977) as amended [Animal Improvement Act, (Act No 62 of 1998)]

[Doc G – VET TECHS: FEB 2018]