SYLLABUS FOR GRADE-V OF MIZORAM ANIMAL HUSBANDRY & VETERINARY SERVICE (VETERINARY OFFICER) EXAMINATION UNDER ANIMAL HUSBANDRY and VETERINARY SCIENCE DEPARTMENT-2019

General English Paper - I (3 hours duration)

ESSAY TYPE
(Full Marks : 100)

(a) Essay Writing. ................................ ............................................... 25 Marks
(b) Précis Writing. ............................................................................. 15 Marks
(c) Letter Writing .............................................................................. 15 Marks
(d) Idioms & Phrases ........................................................................ 15 Marks
(e) Expansion of passages ............................................................... 15 Marks
(f) Comprehension of given passages ............................................. 15 Marks

General English Paper - II (2 hours duration)

OBJECTIVE TYPE (MCQ)
(Full Marks : 100)

(a) Grammar: .................................................................................. 40 Marks
   Parts of Speech, Nouns, Adjective, Verb, Adverb, Preposition, etc.
(b) Composition ................................................................................. 30 Marks
   i) Analysis of complex and compound sentences
   ii) Transformation of sentences
   iii) Synthesis of sentences
(c) Correct usage and vocabularies ................................................. 30 Marks
AH&Vety Paper – I (200 marks)
1. Livestock Production Management
2. Animal Genetics and Breeding
3. Animal Nutrition
4. Veterinary and Animal Husbandry Extension Education
5. Livestock Products Technology

AH&Vety Paper – II (200 marks)
1. Veterinary Microbiology
2. Veterinary Pathology
3. Veterinary Parasitology
4. Veterinary Pharmacology and Toxicology
5. Veterinary Public Health & Epidemiology
6. Veterinary Physiology & Biochemistry

AH&Vety Paper – III (150 marks)
1. Veterinary Anatomy
2. Veterinary Surgery and Radiology
3. Veterinary Medicine
4. Veterinary Gynaecology and Obstetrics

APITUDE (50 marks)

AH&ETY PAPER – I

LIVESTOCK PRODUCTION MANAGEMENT

UNIT-1

UNIT-2
Housing systems, layout and design of different buildings for animals. Selection of site. General principles affecting the design and construction of building for housing for various livestock species. Arrangements of the building with special reference to Indian conditions. Utilization of local materials. Building materials used for construction of wall, roof and floor of animal houses, their characteristics, merits and demerits. Breeds of cattle and buffalo and descriptions of important breeds. Economic traits of cattle and buffaloes. Draught ability of cattle and buffaloes. Raising of buffalo males for meat production. Routine animal farm operations and labour management. Animal farm accounts and records. Breeds of sheep and
goat and their descriptions. Important economic traits for meat, milk and fibre. Weaning and fattening of lambs and kids.

UNIT-3

UNIT-4
Importance and selection of laboratory animal, care and housing standards of mice, rats, hamster and guinea pigs. General considerations on feeding and breeding of laboratory animals. Concept of production of specific pathogen free and germ free laboratory animals. Scope of rabbit farming in the country, breeds and their distributions in India. Selection, care and management of breeding stock for commercial purpose. Identification, care and management of kindling animals. Care of new born, growing stock. Breeding and selection techniques for optimal production of rabbit. Feeds and feeding for rabbit production. Hygienic care and Housing for rabbit production. Disposal, utilization and recycling of waste etc. Important breeds of dogs, cats and pet birds. Feeding of dogs, cats and pet birds. Utility of dogs. Taxonomy of important wild zoo animals. Status and conservation practices of wild life in India. Basic principles of habitat and housing of various classes of wild zoo animals. Size and space requirement (dimension) of cubicles, enclosures of important wild zoo animals. Management of livestock in fringe areas, in and surrounding the breeding areas. Feeding habits, feeds and feeding schedules of captive animals. Restraining, capture, handling, physical examination of captive animals. Classification of zoos, management of sanctuaries, national parks etc.

UNIT-5
ANIMAL GENETICS AND BREEDING

UNIT-1

UNIT-2

ANIMAL NUTRITION

UNIT-1
roughages. Preparation, storage and conservation of livestock feed through silage and hay and their uses in livestock feeding. Harmful natural constituents and common adulterants of feeds and fodders. Feed additives in the rations of livestock and poultry and their uses.

UNIT-2
Importance of scientific feeding. Feeding experiments. Digestion and metabolism trial. Feeding standards, their uses and significance, merit and demerits of various feeding standards with reference to ruminants. Balanced ration and its characteristics. Nutrient requirements and methods for assessing the energy and protein requirements for maintenance and production in terms of growth, reproduction, milk, meat, wool and draft purpose. General principles of computation of rations. Formulation of rations and feeding of dairy cattle and buffaloes during different phases of growth and production (neonate, young, adult, pregnant, lactating and dry animals; breeding bull) and working animals. Formulation of ration and feeding of sheep and goat during different phases of growth and production (milk, meat and wool). Feeding of high yielding animals and role of bypass nutrients. Metabolic disorders and nutritional interventions. Use of NPN compound for ruminants.

UNIT-3

VETERINARY AND ANIMAL HUSBANDRY EXTENSION EDUCATION

UNIT-1

UNIT-2
Communication and its functions. Types of communication. Elements of communication. Barriers of communication. Individual contact methods, Group contact methods, Mass

UNIT-3

LIVESTOCK PRODUCTS TECHNOLOGY

UNIT-1

UNIT-2
structure and development of wool follicle. Post shearing operations of wool, classification and grading of wool, physical and chemical properties of wool. Impurity of wool, factors influencing the quality of wool.

UNIT-3

AH&VETY PAPER – II

VETERINARY MICROBIOLOGY

UNIT-1
Introduction and history of Microbiology; Classification and nomenclature of bacteria; Microscopy and Micrometry; Bacterial stains and techniques; Structure and morphology of bacteria; Growth and nutritional requirement of aerobic and anaerobic bacteria; Normal, opportunistic and saprophytic bacterial flora; Types and sources of infection, method of transmission of infection. Pathogenicity, virulence, determinants of virulence, Epizootic and enzootic diseases, bacteremia, septicaemia and toxemia, endotoxins, exotoxins, antitoxins, toxoids; Bacterial genetics (Mutation, Transformation, Transduction and Conjugation), plasmids and antibiotic resistance. Study of important pathogenic bacteria in relation to isolation, growth, cultural, morphological, biochemical and antigenic characteristics, epidemiology and pathogenesis, pathogenicity, diagnosis, prevention and control of bacterial diseases. Emerging, reemerging and transboundary bacterial pathogens.

UNIT-2
History of Virology; Introduction to viruses; Structure of Viruses; Classification of Viruses; Viral Replication; Genetic and Nongenetic viral interactions; Virus-Cell Interactions; Viral Pathogenesis, Oncogenesis, latency and immunopathology. Studies on General Properties, Antigens, Cultivation, Pathogenesis, Epidemiology, Clinical Signs, Diagnosis, Prevention and Control of Viruses and Prions Causing Diseases in Livestock and Poultry. Introduction, classification, general properties of fungi; Growth and Reproduction of fungi; Studies on isolation, growth, morphological, cultural, biochemical and antigenic characteristics, epidemiology, pathogenesis, diagnosis and control of livestock fungal diseases. Mycotoxicoses

UNIT-3
biological. Basic concepts and scope of Recombinant DNA technology; Gene cloning, Cloning vectors and expression vectors; Transformation and transfection; Southern, Northern and Western blotting; Bioinformatics, Gene banks; Application of molecular and biotechnological techniques: Polymerase chain reaction, Nucleic acid hybridization, DNA library, DNA sequencing and DNA fingerprinting; IPR. Ethics and regulatory issues in Animal Biotechnology

VETERINARY PATHOLOGY

UNIT-1

UNIT-2

UNIT-3

VETERINARY PARASITOLOGY

UNIT- 1
Introduction & important historical landmarks in parasitology. Types of parasites. Types of hosts and vectors. Types of animal associations. Modes of transmission of parasites and methods of dissemination of the infective stages of the parasites. Immunity against parasitic infections or infestations and immune evasion by parasites. General harmful effects of parasites including various tissue reactions caused by parasites. General control measures against parasites. Characters of various phyla of parasites.
UNIT-2

UNIT-3
Arthropods: Introduction, general account and classification, general life cycle of arthropods with morphological features of their developmental stages. Important morphological features, general bionomics, life cycle, vector potentiality, pathogenesis and control of arthropods affecting animals and birds. Study of insecticide or acaricide resistance. Protozoology: Introduction, general account and classification, general life cycle of protozoa with morphological features of their developmental stages. Important morphological features, life cycles, modes of transmission, pathogenesis, epidemiology, diagnosis and general control measures of the protozoan parasites of veterinary and zoonotic importance.

VETERINARY PHARMACOLOGY AND TOXICOLOGY
UNIT-1

UNIT-2

UNIT-3
UNIT-4

VETERINARY PUBLIC HEALTH & EPIDEMIOLOGY

UNIT-1

UNIT-2

UNIT-3
greenhouse effect. Management of waste from animal industries. Stray and fallen animal management and carcass disposal. Vector and reservoir control.

VETERINARY PHYSIOLOGY & BIOCHEMISTRY

UNIT-1

UNIT-2
UNIT-3

UNIT-4

AH&VETY PAPER – III (200 marks)

VETERINARY ANATOMY

UNIT: 1
UNIT-2

UNIT-3

UNIT-4

UNIT-5
Cytology, cell junctions, study of basic tissues. Microscopic structures of digestive, circulatory, urinary, respiratory, nervous, lymphatic, endocrine, male and female genital systems and mammary glands of domestic animals. Microscopic structure of sense organs i.e. eye, ear and integument. Introduction to embryology, gametogenesis, fertilization, cleavage, types of eggs, morula, blastulation, gastrulation, types of implantation, twinning. Formation of foetal membranes in mammals and birds, Placenta and its classification. Different germ layers and their derivatives. Development of organs of digestive system including accessory structures i.e tongue, teeth, salivary glands, liver and pancreas. Development of organs of respiratory, urinary, circulatory, lymphatic, nervous, musculoskeletal, male and female reproductive systems. Development of endocrine glands, sense organs i.e eye and ear.
VETERINARY SURGERY AND RADIOLOGY

UNIT-1

UNIT-2

UNIT-3

VETERINARY MEDICINE

UNIT-1

UNIT-2
Etiology, clinical manifestations, diagnosis, differential diagnosis, treatment, prevention and control of the following diseases of cattle, buffalo, sheep, goat, horse, pig, dog, cat and poultry: Diseases of digestive, respiratory, cardiovascular, urinary, nervous, musculoskeletal, haemopoietic, and lymphatic systems, skin, sense organs including affections of peritoneum, liver and pancreas. Emergency medicine and critical care. Diagnosis and management of diseases caused by deficiency of iron, copper, cobalt, zinc, manganese, selenium, calcium, phosphorus, magnesium, iodine, vitamin A, D, E, B complex, K and C. Diseases of neonates, Alternative or integrated or ethno veterinary medicine in animal disease management. Aetiology, clinical manifestations, diagnosis, differential diagnosis, treatment prevention and control of metabolic or production and endocrine diseases of cattle, buffalo, sheep, goat, horse, pig, dog, cat and poultry.

UNIT-3
Aetiology, epidemiology, clinical manifestations, diagnosis, treatment, prevention and control of bacterial, fungal and rickettsial diseases of livestock. Aetiology, epidemiology, clinical manifestations, diagnosis, treatment, prevention and control of viral and parasitic diseases of diseases of cattle, buffalo, sheep, goat, horse, pig, dog, cat and poultry. Principles of zoo hygiene, public health problems arising from zoos. Prevention, control and treatment of infectious, parasitic, nutritional and metabolic diseases in zoo and wild animals including exotic birds. Acts and Rules related to Zoo and wild animals. National and international organizations and institutions interlinked to wild and zoo animals – role and functioning.

UNIT-4
UNIT- 1

UNIT-2

UNIT–3
Veterinary andrology and A.I. Farm and pet animals - Comparative clinical reproductive anatomy and endocrinology of the male reproduction - Common congenital and genetic defects of the male reproductive tract – Puberty and sexual maturity and factors affecting them - Sexual behaviour and libido - Sperm transport, erection and ejaculation - Coital injuries and vices in male animals - Semen and ejaculate – semen collection techniques- Structure of Spermatozoa - Semen evaluation - Semen extenders, dilution, preservation and post thaw evaluation - Artificial insemination techniques in farm and pet animals - Forms of male infertility. Affections of the scrotum, testis, accessory sex glands, penis and prepuce. Breeding soundness evaluation of bull – In vitro tests for evaluation of male fertility - Medical and surgical techniques for population control of the male reproduction – Surgical procedure on the male reproductive tract in farm and pet animals.
APTITUDE

(a) Numerical And Figurework Tests: (16 Marks)

These tests are reflections of fluency with numbers and calculations. It shows how easily a person can think with numbers. The subject will be given a series of numbers. His/Her task is to see how the numbers go together to form a relationship with each other. He/She has to choose a number which would go next in the series.

(b) Verbal Analysis And Vocabulary Tests: (14 Marks)

These tests measure the degree of comfort and fluency with the English language. These tests will measure how a person will reason with words. The subject will be given questions with alternative answers, that will reflect his/her command of the rule and use of English language.

(c) Visual And Spatial/3-D Ability Tests: (10 Marks)

These tests are used to measure perceptual speed and acuity. The subject will be shown pictures where he/she is asked to identify the odd one out; or which comes next in the sequence or explores how easily he/she can see and turn around objects in space.

(d) Abstract Reasoning Tests: (10 Marks)

This test measures the ability to analyse information and solve problems on a complex, thought based level. It measures a person’s ability to quickly identify patterns, logical rules and trends in new data, integrate this information, and apply it to solve problems.