

(16)

ANNEXURE-A.

**SYLLABUS AND SCHEME OF EXAMINATION FOR THE POST OF VETERINARY OFFICER,
GRADE-V**

MCQ Part-I: English & General knowledge including current affairs(each carrying 10 question containing 1 marks each).

1. English:- 10 Questions (Marks- 1X10=10)

- Synonyms & Antonyms
- Use of common phrase & idioms
- Use of appropriate prepositions and articles
- Comprehension
- Ordering of words in a sentence
- Ordering of sentences
- Spotting of errors
- Use of appropriate and qualifying words etc.
- Parts of speech
- Gender, person & number.
- Tense- past, present & future.
- Voice change

2. General knowledge including current affairs:- 10 Questions (Marks=1X10=10)

- Geography of India:- Physical, Social & Economic.
- Geography of Tripura:- Natural resources with special reference to its soil forest, water and power.
- History of Tripura:- During 1857 to 1949.
- Culture of Tripura:- Different Tribes, Languages, Customs, Festivals Important Historical sites etc.
- Indian polity and Economy:- Country's Political system and Constitution of India, Panchayati Raj, Community development, Economic development during plan periods.
- Science & Technology
- Current affairs of national and International importance

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MCQ PART II: VETERINARY SCIENCES AND ANIMAL HUSBANDRY (150 Questions-150 marks)

Veterinary Anatomy:

General Osteology, Arthrology and Myology, General Angiology, Neurology and Aesthesiology, General Splanchnology, Applied anatomy, histology and Embryology.

Veterinary Physiology and Biochemistry:

Blood, cardiovascular, nervous and muscular systems, digestive and respiratory systems, excretory and endocrine systems, reproduction, lactation, growth physiology, General Veterinary biochemistry, intermediary metabolism.

Veterinary Extension Education:

Livestock based livelihoods and their evolution, transfer of technology for livestock development, communication and extension teaching methods.

Livestock Production Management:

General livestock management, fodder production and conservation, livestock production management-ruminants, poultry production management, swine production management.

Animal Genetics & Breeding:

History, Gregor Johan Mendel- Father of Genetics, Heredity and Variation and its Causes, Monohybrid Cross and Law (Principles) of segregation, Terminology in Genetics, Di-hybrid cross and law of Independent Assortment, Modified Mendelian Ratio, Interaction of Genes/Complementary, Multiple alleles, Inheritance related to sex, Hardy-Weinberg Equilibrium, Extension of Hardy-Weinberg Law, Selection, Metric Characters, Inbreeding, Effective Population size, Value and Means, Population Mean, Average Effect, Breeding Value, Dominance Deviation, Components of Variance, Interaction Variance, Environmental Variance, Resemblance Between Relatives, Heritability, Repeatability, Phenotypic, Genetic and Environmental Correlations, Genotype Environmental Correlation and Interaction, Diploid Chromosome number in different species of animals and birds, Chromosomal Aberrations, Introduction, Domestication of Animals, Animal Genetic Resources (AnGR) , Conservation of Animal Genetic Resources, Selection, Complications of selection, Methods of selection, Sire Evaluation, Combined Selection, Response to Selection, Selection Limit, Correlated Response to Selection, Indirect Selection, Recurrent and Reciprocal Recurrent Selection, Breeding/Mating System, Inbreeding, Effect of inbreeding on different kinds of gene action, Heterosis or Hybrid Vigour, Out breeding Systems, Crossbreeding, Synthetic Breeds of dairy cattle, Out crossing, Top crossing, Line crossing, Stain Crossing and Grading Up, Species Hybridization, Nucleus Breeding Systems (NBS), Livestock Breed Improvement Programmes, Breeding Strategies for Cattle and Buffaloes, Breeding plans for small ruminants and poultry.

Animal Nutrition:

Nutritional aspect of carbohydrates, protein and fats. Importance of minerals and vitamins in animals. Common feeds and fodders, their classification. Measures of food energy and their applications, Protein evaluation of feeds, Calorie protein ratio. Nutritive ratio. Processing of concentrates and roughages. Preparation, storage and conservation of livestock feed through silage and hay. Harmful natural constituents and common adulterants of feeds and fodders. Feed additives in the rations of livestock and poultry. Feeding standards for ruminant's formulation of rations as per Bureau of Indian

Standards, Feeding of dairy cattle and buffaloes during different phases of growth and production (neonate, young, adult, pregnant, lactating and dry animals). Feeding of goat during different phases of growth and production. Metabolic disorders and nutritional interventions. Use of NPN compound for ruminants, Balanced ration and its characteristics. Feeding standards for non-ruminants and poultry as per Bureau of Indian Standards. Feeding of swine (Piglets, Growers, Lactating and pregnant sows, Breeding boar, Fattening animals) and poultry (Starter, Growers, Broilers, Layers) with conventional and unconventional feed ingredients. Feeding of ducks.

Livestock Products Technology:

Composition and nutritive value of milk and factors affecting composition of milk. Physico-chemical properties of milk. Microbiological deterioration of milk and milk products. Collection, chilling, standardization, pasteurization, UHT treatment, homogenization, bacto-fugation. Dried, dehydrated and fermented milk. Introduction to functional milk products. Preparation of cream, butter, paneer or channa, ghee, lassi, dahi, ice-cream and dairy byproducts. Common defects of milk products and their remedial measures. Packaging, transportation, storage and distribution of milk and milk products. Good manufacturing practices and implementation of HACCP in milk plant.

Veterinary Microbiology:

Sterilization and disinfection, Cultivation of bacteria, bacterial stains and staining. Structure of bacteria. Studies on pathogenesis, epidemiology, diagnosis, prevention and control of following bacterial and fungal diseases: Staphylococcus; Streptococcus; Bacillus anthracis; Mycobacterium; Clostridium, Corynebacterium, Listeria, E.coli, Salmonella, Pseudomonas, Burkholderia, Pasteurella, Mannheimia, Brucella, Leptospira, Mycoplasma, Aspergillus, Dermatophytes, Mycotic mastitis and mycotic abortion; Mycotoxicoses. Structure of Viruses, Viral Replication. Studies on Pathogenesis, Epidemiology, Diagnosis, Prevention and Control of following Viruses and Prion diseases: FMD, Bluetongue, PPR, Orf, Rabies, Canine distemper, Infectious Canine Hepatitis, Parvoviral infection, Feline panleucopenia, Infectious bursal disease, Lymphoid leucosis, Marek's disease, Newcastle disease, Bird flu, Infectious laryngotracheitis, Egg Drop Syndrome, Litchi disease, Classical Swine fever, BVD, Pseudorabies, Duck Plague, African Swine Fever, Scrapie, Bovine Spongiform Encephalopathy. Transportation and processing of samples for bacterial, viral and fungal disease diagnosis. Concept on microbial biotechnology. Immunity; Immunoglobulins, Vaccines and vaccination.

Veterinary Public Health and Epidemiology:

One Health concept and initiatives. Role of Veterinarians in Public health. Principles and concepts of food hygiene and safety. Foodborne infections and intoxications associated with foods of animal origin. Milk hygiene in relation to public health. Milk hygiene practices in India and other countries. Elements of meat inspection and meat hygiene practices. Meat as a source of disease transmission. Sources of contamination of meat and methods of carcass decontamination, Speciation of meat. Hazard analysis and critical control points (HACCP) system. Definitions, components and aims of Epidemiology. Ecology of disease. Measures and Patterns of disease occurrence, strategies of disease management: prevention, control and biosecurity. Zoonoses, classification of zoonoses, multisectoral approach for prevention and control of zoonotic diseases, emerging, re-emerging and occupational zoonoses. Zoonotic pathogens as agents of Bioterrorism. Epidemiology, Clinical manifestations, Prevention and Control of the important Bacterial zoonotic diseases (Anthrax, Brucellosis, Tuberculosis, Leptospirosis, Listeriosis and Plague etc.), Viral zoonotic diseases (Rabies, Japanese encephalitis,

(Page-3).

Influenza, Kyasanur forest disease etc.) and Rickettsial zoonotic diseases(Q fever, and rickettsiosis etc.) and Parasitic zoonotic diseases(Taeniasis, Cysticercosis, Hydatidosis, Trichinellosis, and Toxoplasmosis etc.). National and International regulations on livestock diseases. Role of OIE and laws on international trade of animals and animal products. Environmental pollution: Sources, nature of pollutants, effects on animal and human health. Rural and urban pollution. Waterborne diseases – Classification, health hazard, prevention and control. Biosafety: Importance, classification and biosafety measures for prevention of risk hazards. Disaster management and mitigation Sanitation and disinfection of farm and hospital environment in veterinary public practice for infection control. Global warming and greenhouse effect.

Veterinary Pharmacology and Toxicology:

General Pharmacology, sources and nature of drugs, pharmacokinetics and pharmacodynamics, drug interaction, Drugs acting on Autonomic nervous system, central nervous system and drugs acting on different body systems, Veterinary Chemotherapy, Introduction of chemotherapy, antimicrobial agents, miscellaneous agents, antifungal agents, anthelmintics, drug abuse in animals, Introduction, fundamentals and scope of toxicology, toxicity caused by metals, non- metals, poisonous plants, agrochemicals, fungal and bacterial toxins and venomous bites and stings.

Veterinary Parasitology:

Common cestodes, trematodes, nematodes, flies, arthropods and protozoa of livestock and poultry of regional interest, their treatment and control.

Veterinary Pathology:

Pathology including aetiology, pathogenesis, gross and microscopic pathology of common viral, bacterial, fungal, protozoal and helminth infections in ruminants, swine, canine, feline and avian species. Pathological changes of nutritional imbalances due to carbohydrates, proteins, fats, minerals and vitamins and metabolic diseases in domestic animals and birds. Gross and microscopic pathology in (brief) of toxicities like arsenic, copper, lead, mercury, cadmium, strychnine, nitrate or nitrite, hydrocyanic acid, fluoride, selenium and oxalates; insecticide or pesticide poisoning, plant poisoning in animals and birds.

Veterinary Medicine:

Concept of animal diseases, diagnosis, differential diagnosis, treatment and prognosis of diseases, General systemic states hyperthermia, hypothermia, fever, septicaemia, toxemia, shock and dehydration, Etiology, diagnosis, treatment, prevention and control of various systemic diseases of animals and birds, Metabolic and deficiency diseases in animals and birds, Bacterial, viral, fungal and Parasitic diseases: Etiology, Epidemiology, clinical manifestations, diagnosis, treatment, prevention and control, Veterinary Jurisprudence, ethics and animal welfare.

Veterinary Surgery & Radiology:

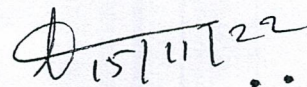
Definitions and classification of Surgery, Sterilization and Disinfection, Different Sutures and suture patterns. Definitions, classification, diagnosis and treatment of abscess, tumour, cyst, hernia. Wounds - definition, classification and diagnosis, general principles for treatment of aseptic, contaminated and septic wounds, healing and factors affecting wound healing, complications of wounds and their remedies. Management of surgical shock and concept of fluid therapy. Veterinary Anesthesia.

(Page-4).

Terminology, definitions and classifications, reversal agents or antidotes, local and regional anesthesia. Anesthetic emergencies and management. Veterinary diagnostic imaging – General terminology of radiology, X-rays, contrast agents and contrast radiography. Regional surgery of various parts and systems of the body of different species of animals. Bovine and canine lameness. Fractures and dislocations in large and small animals and their management. Rehabilitation and physiotherapy of orthopaedic patients.

Veterinary Gynecology and Obstetrics:

Applied anatomy and embryology of the female genital tract, Puberty and sexual maturity and their endocrine control, Estrous cycle and factors affecting the length of the estrous cycle, Aberrations of estrus and their clinical management, Ovulation and aberrations of ovulation – Incidence, causes, diagnosis, treatment and prevention of ovulatory failures, Fertilization and aberrations of fertilization – Fertilization failures, Infertility in various species of animals, Abortion in domestic animals – diagnosis and control, Multiple ovulation and Embryo Transfer Technology (MOET), In vitro fertilization in farm animals, Pregnancy Diagnosis in farm animals, Veterinary Obstetrics in farm and pet animals, Dystocia, types of dystocia, diagnosis and obstetrical interventions for treatment of dystocia, Veterinary Andrology, Evaluation of semen, Storage and shipment of semen, Artificial Insemination Technique.



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II. Pattern of Examination:-

- i. Evaluation of candidates will be done in two (2) stages viz. MCQ test followed by interview/personality test. Marks distribution will be as follows:

SL.	Name of paper	Name of the subjects	Number of Questions/ Maximum Marks
1	General study	MCQ Part I: English & General Knowledge including current affairs.	20
		MCQ Part II: Veterinary Sciences & AH.	150
2	Interview	(i) Interview/personality test.	25
		(ii) Knowledge of Kokborok /Bengali language.	05
TOTAL			200

- ii. Question paper for written exam will be of 170 marks (170 MCQ). Question will be of MCQ type carrying one (1) mark each.
- iii. Duration of examination will be of 180 minutes (3 hours).
- iv. There will be negative marking 0.25 Marks for every wrong answer.
- v. Minimum qualification marks in MCQ test should be as per standing norms of TPSC.
- vi. Number of candidates called for interview, preparation of merit list in any stage and final recommendation will be as per TPSC Guidelines in such cases.

(Signature)

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Joint Secretary to the
Government of Tripura