

**Andhra University**  
**B.Vocational course**  
**DAIRYING & ANIMAL HUSBANDRY**  
**2020-21 Admitted batch**  
**3<sup>rd</sup> year 5<sup>th</sup> Semester**

**Dairying & Animal Husbandry**  
**3<sup>rd</sup> Year 5<sup>th</sup> Semester**

S. No	Courses	Name of the subject	Total marks	Mid Sem exam	Sem end exam	Teaching hours	Credits
1	Core subject	Veterinary Pharmacology (Theory)	100	25	75	4	4
		Veterinary Pharmacology (Practical)	50	--	50	2	2
2	Core subject	Dairy Plant Management (Theory)	100	25	75	4	4
		Dairy Plant Management (Practical)	50	--	50	2	2
3	Core subject	Fundamentals of Veterinary Medicine (Theory)	100	25	75	4	4
		Fundamentals of Veterinary Medicine (Practical)	50	--	50	2	2
4	Core subject	Veterinary Clinical Practice (Theory)	100	25	75	4	4
		Veterinary Clinical Practice (Practical)	50	--	50	2	2
5	Core subject	Basics of Veterinary Surgery (Theory)	100	25	75	4	4
		Basics of Veterinary Surgery (Practical)	50	--	50	2	2
6	Core subject	Veterinary Gynaecology, Obstetrics and AI (Theory)	100	25	75	4	4
		Veterinary Gynaecology, Obstetrics and AI (Practical)	50	--	50	2	2
<b>Total</b>			<b>900</b>	<b>150</b>	<b>750</b>	<b>36</b>	<b>36</b>

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**B.Vocational course**  
**Dairying & Animal husbandry**  
**III Year – Semester V**  
**2020-21 Admitted batch**  
**VETERINARY PHARMACOLOGY**  
**Credits(4+2=6)**

**UNIT - 1**

Introduction, historical development, branches and scope of Pharmacology. Sources and nature of drugs. Pharmacological terms and definitions, nomenclature of drugs.

**UNIT - 2**

Principles of drug activity: Pharmacokinetics - Routes of drug administration, absorption, distribution, biotransformation and excretion of drugs.

**UNIT - 3**

Pharmacodynamics - Concept of drug and receptor, dose-response relationship, terms related to drug activity and factors modifying the drug effect and dosage. Adverse drug reactions, drug interactions

**UNIT - 4**

Classification of drugs. History, mechanism and stages of general anaesthesia. Inhalant, intravenous and dissociative anaesthetics.

**UNIT - 5**

Hypnotics and sedatives; psychotropic drugs, anticonvulsants, opioid analgesics, non-steroidal anti-inflammatory drugs, analeptics and other CNS stimulants. Local anaesthetics, muscle relaxants. Euthanizing agents. Fluid therapy.

**PRACTICALS**

Handling and washing of laboratory wares.

Handling and operation of commonly used laboratory instruments. Concept of good laboratory practices (GLP).

Pharmacy appliances. Principles of compounding and dispensing.

Metrology, systems of weights and measures, pharmacy calculations.

Pharmaceutical processes. Pharmaceutical dosage forms.

Prescription writing, incompatibilities.

Drug standards and regulations, custody of poisons.

Compounding and dispensing of powders, ointments, mixtures, liniments, lotions, liquors, tinctures, emulsions and electuaries.

Demonstration of various chemotherapeutic agents and their dosage forms

**Reference books:**

1. Veterinary Pharmacology Vallachira  
Aravindan
  
2. Essentials Of Veterinary Pharmacology And Therapeutics H S  
Sandhu

3. Handbook of Veterinary Pharmacology
4. Veterinary Pharmacology And Toxicology
5. Essentials of Medical Pharmacology

Walter  
B.K.Roy  
KD Tripathi

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**VETERINARY PHARMACOLOGY**  
**Credits(4+2=6)**

**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks. (5X5 = 25)

1. Write about muscle relaxants.
2. Describe in detail about different stages of general anaesthesia.
3. Write in brief about euthanizing agents .
4. Write a short notes on anti tussives.
5. Describe in detail about antidiarrhoeal drugs.
6. Write a short note about bronchodilators
7. Write about non steroid anti- inflammatory drugs in detail.
8. Classify antiparasitic drugs and explain about benzimidazoles.

**SECTION – B**

Answer **All** the questions. Each question carries **TEN** marks (5X10 = 50)

1. a. Write about different routes of drug administration.  
(or)  
b. write about different factors which effect drug action.
2. a. classify intravenous anaesthetics, local anaesthetics  
(or)  
b. write about fluid therapy.
3. a. Explain in detail about adverse drug reactions.  
(or)  
b. classify different types of purgatives.
- 4 a. Give classification of pencillins in detail.  
(or)  
b. classify aminoglycosides in detail.
- 5 a. write in detail about biotransformation and excretion of drugs.  
(or)  
b. write in detail about drug and receptor, drug - dose response

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**DAIRY PLANT MANAGEMENT**  
**(Credits 4+2=6)**

**UNIT - 1**

Dairy equipment for fluid milk processing – Introduction - The Dairy Plant - Milk Collection or Chilling Centre - Milk Reception and Storage - Pasteurizer and Sterilizer - Homogenizer and Centrifuges - Packaging and Filling - Clean-in-place (CIP) - Cleaning System.

**UNIT - 2**

Dairy equipment for products processing - Objectives - Introduction - Butter and Cheese Making Equipment - Ice-Cream Making Equipment - Evaporators and Dryers.

**UNIT - 3**

Ghee Making Equipment - Khoa Making Equipment - Dahi and Lassi Making Equipment - Paneer, Chana & Casein Making Equipment

**UNIT - 4**

Materials their characteristics and selection of equipment – Objectives – Introduction - Types of Materials - Properties of Materials - Corrosion and its Prevention - Choice of Materials - Milk Handling and Processing Equipment - Selection of Utilities

**UNIT - 5**

Preventive maintenance of dairy plants and machineries - Principles of Preventive Maintenance Development of Plant Maintenance Programme - Guidelines for Effective Lubrication - Care and Cleaning of SS Surface - Care of Pipes and Fittings - Maintenance of Rubber and Gaskets Dairy Building Sanitation Dairy effluent management.

**PRACTICALS:**

Visit to milk collection centre

Visit to milk chilling centre.

Visit to various units of dairy plant.

Hands on training in preparation of various milk products.

Handling of defferent dairy equipment

**REFERENCE BOOKS:**

Ahmad Tufail. (1990). Dairy Plant Systems Engineering. Kitab Mahal Publisher, Allahabad.

Anantkrishnan. C.P. and Simha N.N. (1987). Dairy Engineering Technology and Engineering of Dairy Plant operation. Laxmi Publications, Delhi

Kessler H.G. (1981). Food Engineering and Dairy Technology. Verlag A. Kessler, P.O.Box 1721, Dairy Engineering Division-8050, Freising (Germany)

Warner James. (1976).  
Principles of Dairy Processing. Wiley Eastern Ltd. Publisher, New Delhi.  
Warner James N. (1976).  
Principle of Dairy Processing. Wiley Eastern Limited Publisher, New Delhi  
Newcomer, J.L. (1981).  
Preventive Maintenance Manual for Dairy Industry. Venus Trading Co.,  
P.O.Box 17. ANAND 388 001.

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**DAIRY PLANT MANAGEMENT**  
**(Credits 4+2=6)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**Section - A**

Answer any FIVE questions. Each question carries equal marks. (5x5=25)

1. Describe factors for establishing a dairy plant.
2. Name the facilities available at the collection centre?
3. What are the time and temperature combinations of sterilization process?
4. What is the principle of centrifugation?
5. Explain the operation of churn.
6. Explain process difference in dahi and lassi making.
7. How do we prevent corrosion of metals?
8. Write in detail about Dairy effluent management?

**Section – B**

Answer all the questions. Each question carries TEN marks. (5x10=50)

1. A) What are the basic equipment used in a dairy plant?  
(or)  
B) Write various sections of a dairy plant.
2. A) Describe the differences between a separator and a clarifier.  
(or)  
B) Explain the working of a continuous freezer.
3. A) Explain the working of spray dryer used for milk.  
(or)  
B) Give the working of a homogenizer and explain what are the advantages of homogenization.
4. A) Explain the working of multipurpose process vat used for dahi making.  
(or)  
B) Explain the equipment used for making ghee and khoa.
5. A) Distinguish between internal check up and major overhaul.  
(or)  
B) Describe the importance of proper selection of dairy equipment.

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**III Year – Semester V**  
**2020-21 Admitted batch**  
**FUNDAMENTALS OF VETERINARY MEDICINE**  
**Credits (4+2=6)**

**UNIT – 1**

History and scope of Veterinary Medicine, concept of animal diseases. Concepts of diagnosis, differential diagnosis, treatment and prognosis.

**UNIT – 2**

General systemic states, hyperthermia, hypothermia, fever, septicemia, toxemia, shock, allergy, anaphylaxis, oedema, coma, anaemia

**UNIT – 3**

Etiology, clinical manifestations, diagnosis, differential diagnosis, treatment, prevention and control of diseases of cattle, dog, poultry.

**UNIT – 4**

Diseases of digestive, respiratory, cardiovascular, urinary, nervous, musculoskeletal, haemopoietic, and lymphatic systems, skin.

**UNIT – 5**

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

**PRACTICALS**

Collection of history and general clinical examination.

Collection, preservation, packing and dispatch of samples from clinical cases.

Nasogastric and orogastric intubation in animals.

Examination of eye and ear.

Oxygen therapy in veterinary practice.

Gastric and peritoneal lavage.

Collection and examination of cerebrospinal fluid. Blood transfusion

Methods of medication

**Reference books:**

1. Text book of clinical veterinary medicine Dr.Amalendu chakravarthi
2. Small animal internal medicine Ettinger
3. Large animal internal medicine Bradford and Smith
4. Hand book for veterinary clinicians Dr.A.U.Bhikane and Dr.S.B.Kawitkar
5. A hand book for veterinary physician V.P. Sapre



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**FUNDAMENTALS OF VETERINARY MEDICINE**  
**(Credits 4+2=6)**  
**Model paper**

**Time: 3hrs**

**Maximum: 75marks**

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks. (5\*5 =25)

1. Define fever and list out common causes of fever in livestock.
2. Write a note on Symptoms and treatment of piglet anaemia.
3. Write about causes of Acute gastritis in dog and treatment..
4. Write a note on clinical manifestation seen in Vit-A deficiency in bovines.
5. Write about pica -causes, symptoms and treatment.
6. Write about rickets and Osteomalacia.
7. Write about common causes of itching in dogs.
8. Describe clinical signs of bovine ketosis and it's treatment.

**SECTION – B**

Answer **All** the questions. Each question carries **TEN**marks (5\*10 =50)

1. Write a detailed note on Milk fever in cattle .  
(or)  
Write a detailed note on Post parturient haemoglobinuria in buffaloes.
2. Write a detailed note on causes of Anaemia in cattle  
(or)  
Write a detailed note on Acid indigestion in large ruminants.
3. Write in detail about gout in poultry.  
(or)  
Write about Traumatic Reticulo Pericarditis in bovines.
4. Write a detailed note on Simple indigestion and it's treatment in bovines..  
(or)  
Write a note on causes , Symptoms and treatment of bloat.
5. Enlist the causes and treatment of enteritis in ruminants.  
(or)  
Write about hypothyroidism in dogs and it's treatment.

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**VETERINARY CLINICAL PRACTICE**  
**Credits (4+2=6)**

**UNIT -1**

History and scope of veterinary medicine.  
Case history  
Dehydration  
Fever, septicemia, shock, coma.  
Fluid therapy

**UNIT -2**

Acid indigestion  
Alkaline indigestion  
Impaction  
Bloat  
Traumatic reticular peritonitis  
Bovine ketosis  
Mastitis  
Milk fever  
Toxemia  
White scours  
Poisoning

**UNIT - 3**

Concept of Artificial insemination  
Repeat breeding  
Pyometra  
Dystocia  
Prolapse  
Retention of placental membranes

**UNIT -4**

Wound management  
Abscess  
Maggot wound  
Lameness  
Evisceration of eye balls  
Medial patellar desmotomy  
Horn amputation  
Rumenotomy  
C- section

**UNIT -5**

Disinfection  
Sterilization of equipment

Preparation of animal for surgery  
Post surgical management

### **PRACTICALS**

Disinfection  
Sterilization  
Diagnosis  
Differential diagnosis  
Systemic diseases in large animals  
Metabolic diseases in large animals

### **Reference books:**

1. Text book of clinical veterinary medicine Dr.Amalendu chakravarthi
2. Small animal internal medicine Ettinger
3. Large animal internal medicine Bradford and Smith
4. Hand book for veterinary clinicians Dr.A.U.Bhikane and Dr.S.B.Kawitkar
5. A hand book for veterinary physician V.P. Sapre

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**VETERINARY CLINICAL PRACTICE**  
**(Credits 4+2=6)**

**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks. (5\*5 =25)

1. Write in detail about disinfection and sterilization of equipment.
2. Write in detail about bloat and impaction.
3. Write about fever, shock, coma.
4. Write about poisoning in animals.
5. Write about prolapse in large animals.
6. Write about preparation of animal for surgery
7. Discuss lameness in large animals.
8. Write in detail about maggot wound in large animals

**SECTION – B**

Answer **All** the questions. Each question carries **TEN** marks (5\*10 =50)

1. Write in detail about fluid therapy.  
(or)  
Discuss about scope of veterinary medicine.
2. Write about mastitis, causes, clinical symptoms, diagnosis, treatment, prevention.  
(or)  
Write about acid digestion, causes, clinical symptoms, diagnosis, treatment, prevention.
3. Write about repeat breeding , causes, clinical symptoms, diagnosis, treatment, prevention.  
(or)  
Write about pyometra, causes, clinical symptoms, diagnosis, treatment, prevention.
4. Write about milk fever, causes, clinical symptoms, diagnosis, treatment, prevention.  
(or)  
Write about horn amputation in large animals.
5. Write about traumatic reticular peritonitis, causes, clinical symptoms, diagnosis, treatment, prevention.  
(or)  
Write about various types of wounds in animals.

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**BASICS OF VETERINARY SURGERY**  
**Credits(4+2=6)**

**UNIT - 1**

Introduction: Historical perspective, Definitions. classification of surgery.  
Tenets of Halsted.

**UNIT - 2**

History taking, physical examination, clinico-pathological testing.  
Pre-operative, intra-operative and post-operative considerations

**UNIT - 3**

Sterilization and disinfection: Definitions, surgical sterilization, various  
methods of sterilization (Heat, chemical and radiations etc.), disinfections.

**UNIT - 4**

Sutures: Definitions, suturing, factors influencing suturing, characteristics of  
an ideal suture material, types of suture material-absorbable and non-  
absorbable, surgical knots, various suture patterns-apposition, eversion,  
inversion and special.

**UNIT - 5**

Basic surgical affections: Definitions, classification, diagnosis and treatment  
of abscess, tumour, cyst, hernia, haematoma, necrosis, gangrene, burn and  
scald, frost bite and surgical affections of muscles, artery and vein, sinus and  
fistula.

Fractures.

Major surgeries of cattle and dogs.

**PRACTICALS**

Introduction to layout of operation theatre and surgical unit.

Introduction of common surgical equipment and instruments.

Suture materials, surgical knots and suture patterns.

General examination of surgical patients. Preparation of surgical patients.

Other operation theatre routines like sterilization, preparation of theatre,

Surgeon and surgical pack.

Bandaging and basic wound management Demonstration (or Audio visual  
aids) of surgery, control of haemorrhage and suturing

**Reference books:**

A Textbook On Veterinary Surgery and Radiology

S.K NANDI

Essentials of Veterinary surgery

Venugopalan S

Dollor's Veterinary surgery

Oconnor JJ

Veterinary surgery

E R Frank

Veterinary Surgery

Spencer A Johnston

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**BASICS OF VETERINARY SURGERY**  
**Credits(4+2=6)**

**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks. (5\*5 =25)

1. Halsted principles of surgery
2. What is an abscess and how it is differentiated from Cyst, Haematoma, Tumour and hernia.
3. Write in detail about preparation of patient before surgery ?
4. Define sterilization? Write in detail about various methods of sterilization .
5. Write in detail about post operative care of animal.
6. Classify wounds? List out the factors responsible for delayed wound healing.
7. Write detail about Anamnesis.

**SECTION – B**

Answer All the questions. Each question carries TEN marks (5\*10 = 50)

- 1.a. Non absorbable synthetic suture materials  
(or)  
b. Treatment of maggot wounds
2. a. Different methods of haemostasis  
(or)  
b. write in detail about fractures and also classify them.
- 3.a Treatment for Burns  
(or)  
b. write down castration protocol in large animals.
- 4.a write down various surgical affections of pelvic cavity of dog  
(or)  
b. Umbilical hernia
- 5.a. write down various surgical affections of abdominal cavity of cattle  
(or)  
b. write in detail about absorbable suturing material

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**VETERINARY GYNAECOLOGY, OBSTETRICS AND AI**  
**Credits(4+2=6)**

**UNIT -1**

Anatomy of female and male reproductive tract of live stock. Puberty and sexual maturity.

**UNIT - 2**

Oestrous cycle and factors affecting the length of the oestrous cycle- Aberrations of oestrus and their clinical management and problems in oestrus detection and oestrus detection aids.

**UNIT -3**

Pathological affections of ovary, uterine tubes, uterus, cervix , vagina and external genitalia and male genitalia.

**UNIT -4**

Pregnancy diagnosis- Duration of pregnancy -Factors affecting gestation length.

**UNIT -5**

Care and management of pregnant animals. Stages of parturition. Forms of female and male infertility in bovines.  
Artificial insemination techniques in farm and pet animals

**PRACTICALS**

Study of female and male genital organs using slaughter house specimens  
Oestrus detection in farm animals  
Techniques of rectal palpation of female reproductive tract  
Gynaecological equipment and instruments  
Vaginal exfoliative cytology and vaginoscopy  
AI equipment and technique  
Vasectomy and castration  
Handling and maintenance of LN2 containers

**Reference books:**

- |  |                          |
|--|--------------------------|
| 1. Veterinary obstetrics and genital diseases<br>J.Roberts             | Stephen                  |
| 2. Applied veterinary gynaecology and obstetrics<br>kumar              | Dr.Pradeep               |
| 3. Veterinary reproduction and obstetrics<br>Arthur                    | Geoffrey H.              |
| 4. Veterinary Reproduction and Obstetrics<br>J. Parkinson & Gary C. W. | David E. Noakes, Timothy |

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**VETERINARY GYNAECOLOGY, OBSTETRICS AND AI**  
**(Credits 4+2=6)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks. (5\*5 =25)

1. Write in detail regarding factors effecting gestational length.
2. Explain regarding factors that influence puberty and sexual maturity.
3. Write about different techniques used for pregnancy diagnosis in animals.
4. Discuss in detail about estrus cycle in bovines.
5. Write about the factors that influence estrus behaviour in buffaloes.
6. Draw the diagram of buffaloes female reproductive tract .
7. Discuss about procedure of artificial insemination in cattle.
8. Discuss about procedure of artificial insemination in bitch.

**SECTION – B**

Answer **All** the questions. Each question carries **TEN** marks (5\*10 =50)

1. A) Write in detail about factors effecting gestation length.  
(or)  
B) Write about technique of vaginal exfoliative cytology in bitches.
2. A) Discuss about care and management of pregnant animals.(or)  
B) Explain about theories of parturition(physiology) in cattle.
3. A) Discuss about estrus detection aids used for cattle.  
(or)  
B) Write about handling and maintenance of LN2 containers.
4. A) Discuss in detail regarding Impotentia generandi  
(or)  
B) Enumerate different gestational periods in different species
5. A) Discuss in detail regarding Impotentia coeundi.  
(or)  
B) Draw diagrams of different cells exposed during vaginal cytology in bitches.



