

**ANDHRA UNIVERSITY  
VISAKHAPATNAM**

**B. Vocational  
DAIRYING & ANIMAL HUSBANDRY  
(Honours)**

**UGC- NATIONAL SKILLS QUALIFICATIONS  
FRAMEWORK**

**SYLLABUS**

**For**

**1st to 8th Semesters**

**2023-2024 Admitted batch**

B.VOC (HONOURS) DAIRYING & ANIMAL HUSBANDRY 2023-24 BATCH					
1 <sup>st</sup> Year	1 <sup>st</sup> Semester	1.	English	Language	3+0=3
		2.	Telugu	Language	3+0=3
		3.	Introduction to Social work	Multi-disciplinary course	2+0=2
		4.	Leadership skills	Skill enhancement course	2+0=2
		5.	Communication skills	Skill enhancement course	2+0=2
		6.	Basics of Veterinary sciences	Major subject	4+0=4
		7.	Basics of Animal sciences	Major subject	4+0=4
	Total				20+0=20
	2 <sup>nd</sup> Semester	1.	English	Language	3+0=3
		2.	Telugu	Language	3+0=3
		3.	Pet and zoo animal management	Skill enhancement course	2+0=2
		4.	Dairy farm general management	Skill enhancement course	2+0=2
		5.	Veterinary Anatomy	Major subject	4+0=4
		6.	Veterinary Physiology	Major subject	4+0=4
7.		Livestock production and management	Minor subject	3+1=4	
Total				21+1=22	
Community service project of 180 hours with 4 credits. Student is eligible for Exit option-1 with the award of Certificate					0+4=4
2 <sup>nd</sup> Year	3 <sup>rd</sup> Semester	1.	Introduction to public administration	Multi-disciplinary course	2+0=2
		2.	Veterinarian in society	Skill enhancement course	2+0=2
		3.	Animal genetics and breeding	Major subject	3+1=4
		4.	Basics of Animal nutrition	Major subject	3+1=4
		5.	Veterinary public health and food safety	Major subject	3+1=4
		6.	Veterinary immunology and vaccines	Major subject	3+1=4
		7.	Fodder production and conservation	Minor subject	3+1=4
	Total				19+5=24
	4 <sup>th</sup> Semester	1.	Health and hygiene	Multi-disciplinary course	2+0=2
		2.	Disaster management	Skill enhancement course	2+0=2
		3.	Laboratory diagnostic techniques	Major subject	3+1=4
		4.	Livestock production and technology	Major subject	3+1=4
		5.	Infectious diseases of livestock and poultry	Major subject	3+1=4
		6.	Avian production and management	Minor subject	3+1=4
7.		Dairy plant management	Minor subject	3+1=4	
Total				19+5=24	
Short term internship/Apprenticeship of 180 hours with 4 credits. Student is eligible for Exit option-2 with the award of Diploma.					0+4=4
3 <sup>rd</sup> Year					
	5 <sup>th</sup> Semester	1.	Fundamentals of Veterinary medicine	Major subject	3+1=4
		2.	Basics of Veterinary surgery	Major subject	3+1=4
		3.	Veterinary Gynaecology, Obstetrics and AI	Major subject	3+1=4
		4.	Veterinary Pharmacology	Major subject	3+1=4
		5.	Veterinary clinical practice	Minor subject	3+1=4
		6.	Animal welfare ethics and jurisprudence	Minor subject	3+1=4
		7.	Environmental education		2+0=2
Total				20+6=26	
6 <sup>th</sup> Semester Long term semester internship/Apprenticeship with 12 credits.					0+12=12

	Student is eligible for Exit option-3 with the award of Degree.				
4 <sup>th</sup> Year	7 <sup>th</sup> Semester	1.	General pathology	Major subject	3+1=4
		2.	Veterinary general bacteriology	Major subject	3+1=4
		3.	Veterinary general parasitology and helminthology	Major subject	3+1=4
		4.	Andrology and Artificial insemination	Skill enhancement course	3+1=4
		5.	Poultry farming	Skill enhancement course	3+1=4
		6.		Open online transdisciplinary course	2+0=2
		7.		Indian knowledge system-Audit course	-
	Total				17+5=22
	8 <sup>th</sup> Semester	1.	Veterinary toxicology	Major subject	3+1=4
		2.	Avian pathology	Major subject	3+1=4
		3.	Veterinary protozoology	Major subject	3+1=4
		4.	Animal birth control programme	Skill enhancement course	3+1=4
		5.	Hatchery management and biosecurity measures	Skill enhancement course	3+1=4
		6.		Open online transdisciplinary course	2+0=2
		7.		Indian knowledge system-Audit course	-
	Total				17+5=22
Grand total				133+47=180	
20 Additional credits for 10-month mandatory Internship/Apprenticeship					

## **CURRICULAR FRAME WORK**

### **B.Voc Dairying and animal husbandry(Honours)**

<b>Subjects</b>	<b>Semester I</b>	<b>Semester II</b>	<b>Semester III</b>	<b>Semester IV</b>	<b>Semester V</b>	<b>Semester VI (Field work)</b>	<b>Semester VII</b>	<b>Semester VIII</b>	<b>Total credits</b>
<b>English</b>	<b>3+0=3</b>	<b>3+0=3</b>							<b>6+0=6</b>
<b>Telugu</b>	<b>3+0=3</b>	<b>3+0=3</b>							<b>6+0=6</b>
<b>Multidisciplinary courses</b>	<b>2+0=2</b>		<b>2+0=2</b>	<b>2+0=2</b>					<b>6+0=6</b>
<b>Skill enhancement courses</b>	<b>4+0=4</b>	<b>4+0=4</b>	<b>2+0=2</b>	<b>2+0=2</b>			<b>6+2=8</b>	<b>6+2=8</b>	<b>24+4=28</b>
<b>Major subjects</b>	<b>8+0=8</b>	<b>8+0=8</b>	<b>12+4=16</b>	<b>9+3=12</b>	<b>12+4=16</b>		<b>9+3=12</b>	<b>9+3=12</b>	<b>67+17=84</b>
<b>Minor subjects</b>		<b>3+1=4</b>	<b>3+1=4</b>	<b>6+2=8</b>	<b>6+2=8</b>				<b>18+6=24</b>
<b>OOTC</b>							<b>2+0=2</b>	<b>2+0=2</b>	<b>4+0=4</b>
<b>Environmental education</b>					<b>2+0=2</b>				<b>2+0=2</b>
<b>CSP</b>		<b>0+4=4</b>							<b>0+4=4</b>
<b>Short-term internship</b>				<b>0+4=4</b>					<b>0+4=4</b>
<b>Long-term internship</b>						<b>0+12=12</b>			<b>0+12=12</b>
<b>Total</b>	<b>20+0=20</b>	<b>21+5=26</b>	<b>19+5=24</b>	<b>19+9=28</b>	<b>20+6=26</b>	<b>0+12=12</b>	<b>17+5=22</b>	<b>17+5=22</b>	<b>133+47=180</b>

**ANDHRA UNIVERSITY**  
**B.Vocational course**  
**Dairying & Animal husbandry - Honours**  
**I Year – Semester I**  
**2023-24 Admitted batch**

<b>1<sup>st</sup> Semester</b>	1.	English	Language	3+0=3
	2.	Telugu	Language	3+0=3
	3.	Introduction to social work	Multi-disciplinary course	2+0=2
	4.	Leadership skills	Skill enhancement course	2+0=2
	5.	Communication skills	Skill enhancement course	2+0=2
	6.	Basics of Veterinary sciences	Major subject	4+0=4
	7.	Basics of Animal sciences	Major subject	4+0=4
<b>Total</b>				<b>20+0=20</b>

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**I Year – Semester I**  
**2023-24 Admitted batch**  
**English**  
**(Credits 3+0=3)**

**I. UNIT: Listening Skills**

- a. Importance of Listening
- b. Types of Listening
- c. Barriers to Listening
- d. Effective Listening

**II. UNIT: Phonetics**

- a. Sounds of English: Vowels and Consonants
- b. Syllable
- c. Word Stress
- d. Intonation

**III. UNIT: Grammar**

- a. Concord
- b. Articles
- c. Prepositions
- d. Tenses
- e. Question tags

**IV. UNIT: Speaking Skills**

- a. Greetings & Introduction
- b. Asking and Giving Information
- c. Yes, We Can Barack Obama
- d. Agreeing/ Disagreeing
- e. A Leader Should Know How to Manage Failure Dr. A.P.J. Abdul Kalam

**V. UNIT: Soft Skills**

- a. SWOC
- b. Attitude
- c. Emotional Intelligence
- d. Netiquette
- e. Interpersonal Skills

**References:**

1. Soft Skills, Dr. Alex (New Delhi: S. Chand & Company Ltd) 2009.
2. Interpersonal Skills Training, Philip Burnard (New Delhi: Viva Books Private Ltd)
3. Soft Skills for Everyone, Jeff Butterfield (New Delhi: Cengage Learning India Pvt Ltd) 2012
4. Emotional Intelligence, Daniel Goleman (London: Bloomsbury Publishing) 1996
5. A Text Book of English Phonetics for Indian Students, Balasubramanian
6. A Handbook for English Language Learners, E. Suresh Kumar, P. Sreehari
7. Communication Skills (2nd Edition), Sanjay Kumar & Pushp Lata, Oxford University Press, 2016.

**Activities:**

Make the students listen to news excerpts.

Watch interviews and speeches on YouTube.

Role plays on formal and informal conversations.

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**Telugu**  
**(Credits 3+0=3)**

**పాఠ్య ప్రణాళిక**

**యూనిట్ -I (ప్రాచీన కవిత్వం)**

రాజనీతి - నన్నయ్య - ఆంధ్ర మహాభారతం - సభాపర్వం - ప్రథమాశ్వాసం (26-57 పద్యాలు)

- |                                |                           |
|--------------------------------|---------------------------|
| ▪ నన్నయ్య - కవి పరిచయం         | ▪ ప్రజాపాలన - నాడు, నేడు  |
| ▪ రాజనీతి - పాఠ్యాంశ ఇతివృత్తం | ▪ రాజనీతి పాఠ్యాంశ సందేశం |

**యూనిట్ -II (ఆధునిక కవిత్వం)**

గబ్బిలం - జాషువా - ప్రథమ భాగం (1-40 పద్యాల వరకు)

- |  |                      |
|--|----------------------|
| ▪ గుర్రం జాషువా - కవి పరిచయం, కవితా శైలి | ▪ కావ్య రచనా నేపథ్యం |
| ▪ గబ్బిలం పాఠ్యాంశ ఇతివృత్తం             | ▪ పాఠ్యాంశ సందేశం    |

**యూనిట్ -III (కథానిక)**

అలరాస పుట్టిళ్ళు - కళ్యాణ సుందరీ జగన్నాథ్

- |                   |                       |
|-------------------|-----------------------|
| ▪ రచయిత్రి పరిచయం | ▪ కథా నేపథ్యం, సందేశం |
| ▪ కథాంశం          | ▪ పాత్ర చిత్రణ        |

**యూనిట్ -IV (నవల)**

అసమర్థుని జీవయాత్ర - గోపీచంద్

- |                               |               |
|-------------------------------|---------------|
| ▪ గోపీచంద్ - రచయిత పరిచయం     | ▪ నవల నేపథ్యం |
| ▪ నవల ఇతివృత్తం, పాత్ర చిత్రణ | ▪ నవలా సందేశం |

**యూనిట్ -V (జీవిత చరిత్ర)**

మూడు వాఙ్మయ శిఖరాలు - తిరుమల రామచంద్ర

- |                               |                         |
|-------------------------------|-------------------------|
| ▪ తిరుమల రామచంద్ర - కవిపరిచయం | ▪ నిడదవోలు వేంకట రావు   |
| ▪ వేటూరి ప్రభాకర శాస్త్రి     | ▪ మానవల్లి రామకృష్ణ కవి |



## వ్యాకరణం

సంధులు: అత్వ, ఇత్వ, ఉత్వ, త్రిక,  
సరళాదేశ, గసడదవాదేశ, ద్విరుక్త టకార,  
సవర్ణ దీర్ఘ, గుణ, యణాదేశ,  
వృద్ధి సంధులు.

సమాసాలు: అవ్యయిభావ, తత్పురుష,  
కర్మధారయ, ద్వంద్వ, ద్విగు, బహువ్రీహి.

అర్థాలంకారాలు : ఉపమ, ఉత్పేక్ష, రూపక,  
స్వభావోక్తి, అర్థాంతర వ్యాస, అతిశయోక్తి, శ్లేష.

శబ్దాలంకారాలు: వృత్త్యనుప్రాస, భేకానుప్రాస,  
లాటానుప్రాస, అంత్యానుప్రాస

వృత్తాలు: ఉత్పలమాల, చంపకమాల,  
శార్దూలము, మత్తేభము

జాతులు : కందం, ద్విపద

ఉపజాతులు : ఆటవెలది, తేటగీతి, సీసం  
ముత్యాలసరాలు

## ■ ఆధార గ్రంథాలు:

1. శ్రీమదాంధ్ర మహాభారతము - సభాపర్వము-  
తిరుమల తిరుపతి దేవస్థానం ప్రచురణ
2. గచ్చిలం - జాషువా
3. అలరాస పుట్టిళ్లు - కళ్యాణ సుందరీ జగన్నాథ
4. అసమర్థుని జీవయాత్ర - త్రిపురనేని గోపీచంద్
5. మూడు వాఙ్మయ శిఖరాలు - తిరుమల  
రామచంద్ర

## ■ సూచించబడిన సహపాఠ్య కార్యక్రమాలు:

1. నన్నయ్య, తిక్కన, ఎఱ్ఱన మొదలైన ప్రసిద్ధ  
కవుల పాఠ్యాంశేతర పద్యాలను ఇచ్చి,  
విద్యార్థులచేత సమీక్షలు రాయించడం; ఆయా  
పద్యాల్లోని యతిప్రాసాది భందోవిశేషాలను  
గుర్తింపజేయడం.

2. విద్యార్థులచేత పాఠ్యాంశాలకు సంబంధించిన  
వ్యాసాలు రాయించడం (సెమినార్/అసైన్మెంట్)
3. ప్రాచీన పాఠ్యాంశాలలోని సమకాలీనతను  
గూర్చిన బృంద చర్చ, ప్రాచీన సాహిత్యాన్ని నేటి  
సామాజిక దృష్టితో పునర్మూల్యాంకనం  
చేయించడం.
4. చారిత్రక, సాంస్కృతిక అంశాలకు సంబంధించిన  
పర్యాటక ప్రదేశాలను సందర్శించడం.
5. వ్యక్తిగత/బృంద ప్రాజెక్టులు చేయించడం.

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**2023-24 Admitted batch**  
**Introduction to Social Work**  
**(Credits 2+0=2)**

**Unit-I**

Introduction to social work and concepts related to social work  
Introduction to Social Work- Definition- Scope- objectives - Functions- social service, social welfare services, social reform, major social problems in India; Social work philosophy, values, objectives, principles, methods and fields of social work.

**Unit-II**

Methods of Working with Individuals and Groups  
Social case work –Definition-scope and importance of social case work, principles and process of social case work -Tools and techniques in social case work- Counselling skills.  
Social Group Work-Definition-scope- the need for social group work –Group work process - Principles of Group Work -Stages of Group Work-Facilitation skills and techniques.

**Unit-III**

Working with Communities and Field Work in social work  
Community – definition - characteristics- types- community organisation as a method of social work-definition-objectives-principles- phases of community organization - concepts of community development, community participation and community empowerment.  
Field work in social work – Nature, objectives and types of field work - Importance of field work supervision.

**References:**

1. Chowdhary, Paul. D. (1992). Introduction to Social Work. New Delhi: Atma Ram and Sons.
2. Friedlander W.A. (1955). Introduction to social welfare, New York, Prentice Hall.
3. Government of India, (1987). Encyclopedia of Social Work in India (Set of 4 Volumes). New Delhi, Publications Division, Ministry of Information and Broadcasting.
4. Lal Das, D.K. (2017). Practice of Social Research – Social Work Perspective, Jaipur, Rawat Publications.
5. Madan, G.R. (2009). Indian Social Problems (Volume 1 & 2). New Delhi: Allied publishers Private Limited.
6. Siddiqui, H.Y.(2007). Social Group Work. Jaipur: Rawat Publications
7. Pasty McCarthy &Carolyn Hatcher, (2002). Presentation skills. The Essential Guide for Students. New Delhi, Sage Publications.
8. Websites on Social work methods

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**Leadership skills**  
**(Credits 2+0=2)**

**Unit – I:**

Meaning of Personality – Explanations of Human Personality – Psychodynamic Explanations – Social Cognitive Explanation – Big Five traits of Personality

**Unit – II:**

Assessment of Personality - Projective & Self Report Techniques - Building Self- Confidence – Enhancing Personality Skills

**Unit – III:**

Leadership Characteristics – Types of Leaders – Importance of Leadership – Leadership Skills – Building and Leading Efficient Teams – Leadership Qualities of Abraham Lincoln, Mahatma Gandhi, Prakasam Pantulu, Dr. B. R. Ambedkar & J.R.D. Tata

**Co-curricular Activities Suggested:**

1. Assignments, Group discussions, Quiz etc.,
2. Invited Lecture by a local expert
3. Case Studies (ex., on students behavior, local leaders etc.)

**Reference Books:**

- Girish Batra, Experiments in Leadership, Chennai: Notion Press, 2018
- Mitesh Khatri, Awaken the Leader in You, Mumbai: Jaico Publishing House, 2013
- Carnegie Dale, Become an Effective Leader, New Delhi: Amaryllis, 2012
- Hall, C.S., Lindzey. G. & Campbell, J.B Theories of Personality. John Wiley & Sons, 1998

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**B.Vocational course**  
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**I Year – Semester I**  
**2023-24 Admitted batch**  
**Communication skills**  
**(Credits 2+0=2)**

**UNIT-I**

**BASICS OF COMMUNICATION**

1. Nature and importance of communication
2. Process of Communication
3. Principles of communication
4. Barriers to effective communication
5. Strategies for effective communication

**UNIT-II**

**PRESENTATION SKILLS**

1. Preparation of a good presentation
2. Verbal communication in presentation
3. Non-verbal communication in presentation
4. Visual aids/Materials in presentation
5. Analyzing audience and managing questions

**UNIT- III**

**INTERVIEWS AND GROUP DISCUSSIONS**

1. Interview and its types
2. Before, during and after an interview
3. Do's and Don'ts in an interview
4. Basic Interview questions
5. Structure and process of Group Discussions
6. Role functions, Do's and Don'ts

**Recommended Activities:**

- Presenting seminar papers.
- Mock interviews.
- Using Power point presentations in seminars.

**References:**

- Working in English, Jones, Cambridge
- Business Communication, Raman –Prakash, Oxford
- Speaking Personally, Porter-Ladousse, Cambridge
- Speaking Effectively, Jermy Comfort, et.al, Cambridge
- Anjanee Sethi & Bhavana Adhikari, Business Communication, Tata McGraw Hill
- Jermy Comfort, Speaking Effectively, et.al, Cambridge

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**BASICS OF VETERINARY SCIENCES**  
**(Credits 4+0=4)**

**UNIT – 1**

Introduction to Anatomy and Branches of Anatomy, Descriptive terms, Anatomical planes, Divisions of Gross Anatomy.

Introduction to Osteology – Osteological terms, Functions of bones and skeleton, Composition and Structure of bone.

General Arthrology, Introduction to Myology – Classification of muscles, Organs of Special Senses, Endocrine glands.

**UNIT – 2**

Physiology- Introduction to blood, Functions of blood as a body fluid, Various blood groups.

Introduction to physiology of digestion in animals, Respiration- Pulmonary volumes and capacities, Structure of kidney and its functions

**UNIT – 3**

Immunology - Important definitions in immunology, History and theories of immunology, Immune system – Lymphoid organs, cells- cells of specific immune system and Non-specific immune system.

**UNIT – 4**

Laboratory diagnostic techniques – Microscope and its components, care of microscope, Different types of microscopes, Sterilization – its mechanism and methods of sterilization.

**UNIT – 5**

Gynaecology – Terms used in Gynaecology, Introduction to Reproductive System, Puberty and Sexual Maturity – Factors affecting puberty and sexual maturity, Male and Female Reproductive Systems of Livestock.

**References:**

- Text book of Veterinary Anatomy - R.K.Ghosh
- Text book of Veterinary physiology - B.Bhattacharya
- Veterinary Immunology - Ian R Tizard, Elsevier Science
- Veterinary Laboratory Diagnosis - Chauhan RS
- Veterinary reproduction and obstetrics - Geoffrey H. Arthur

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**I Year – Semester I**  
**2023-24 Admitted batch**  
**BASICS OF VETERINARY SCIENCES**  
**(Credits 4+0=4)**  
**Model paper**

**Time: 3 hrs**

**Maximum: 75marks**

**SECTION – A**

Answer any FIVE questions. Each question carries five marks. (4\*5 =20)

1. What is Anatomy and explain its divisions in detail?
2. Write about classification of bones?
3. List out various endocrine glands and its position in the body of animal?
4. Explain blood and its functions?
5. Write differences between primary and secondary lymphoid organs?
6. Write in detail history of immunology?
7. Explain various components of microscope?
8. Explain pulmonary volumes and capacities?

**SECTION-B**

Answer all the Questions. Each question carries ten marks (5\*10=50)

1. A. Explain in detail about structure of bone?  
Or  
B. Write in detail about classification of joints and classification of muscles?
2. A. Draw the diagram of cross section of kidney and write its functions?  
Or  
B. Explain in detail Reproductive system of Cow?
3. A. Explain different types of microscopes?  
Or  
B. Write in detail about sterilization and different methods of sterilization?
4. A. List out both primary and secondary lymphoid organs and explain in detail about primary lymphoid organs?  
Or  
B. List out cells of Immune system and write in detail about cells of specific Immune system?
5. A. Write in detail about factors affecting puberty and sexual maturity?  
Or  
B. Explain in detail Reproductive system of Bull?

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**BASICS OF ANIMAL SCIENCES**  
**(Credits 4+0=4)**

**UNIT – 1**

Introduction to livestock, Livestock in India, Livestock census, Role of livestock in Indian economy, Problems and prospects of livestock industry in India, Livestock improvement, Common animal husbandry terms, Body confirmation points of bovines, parts of head, neck, dorsal aspect, ventral aspect, side view, forelimb, hindlimb.

**UNIT -2**

Growth of poultry industry, Reasons for commercialization of poultry, Classification of poultry, Classification of poultry breeds based on their place of origin, Classification of poultry breeds based on their utility and economics, General characteristics and standards, Indigenous breeds of chickens.

**UNIT – 3**

Importance of nutrients in animal production and health, Proximate composition, Common definitions in animal nutrition, Classification of nutrients.

**UNIT – 4**

Introduction to fodder, Scenario of livestock sector in the country, Requirement vs availability, Constraints and ways and means to increase forage production, Agriculture terminology related to fodder production, Agronomical practices for fodder production, Grasslands.

**UNIT -5**

Aim and scope of veterinary public health, Role of veterinarian in public health, One health concept, Veterinary public health administration, Principles and concepts of food hygiene and safety, Sources of contamination of food.

**References:**

- Handbook of Poultry Production and Management - M F Siddique
- Production and Grassland Management for Veterinarians - D.V.Reddy
- Textbook of elements of veterinary public health - A.T. Sherikar, V.N. Bachhil & D.C.Thapliyal
- Principles of animal nutrition and feed technology - D.V.Reddy
- Livestock Production Management - NSR SASTRY, CK THOMAS

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**BASICS OF ANIMAL SCIENCES**  
**(Credits 4+0=4)**  
**Model paper**

**Time: 3 hrs**

**Maximum: 75marks**

**SECTION – A**

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

1. What are the principles of food hygiene?
2. Classify poultry breeds based on their place of origin.
3. What are the methods for improvement of livestock?
4. What are the nutrients present in different proximate principles of feeds?
5. What are the ways to increase fodder production?
6. What are the sources of contamination of food?
7. What do you understand by Livestock production?
8. Write about Importance of water in the Animal Body

**SECTION – B**

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

1. What is the Role of livestock in Indian economy?

(OR)

What are the problems and prospects of livestock industry in India?

2. What are the reasons for commercialisation of poultry?

(OR)

Write the general characteristics of poultry breeds based on their place of origin.

3. Write the characteristics of indigenous breeds of poultry.

(OR)

Explain the classification of nutrients in detail.

4. What are the grassland improvement and management techniques.

(OR)

What are the various grazing methods.

5. Define one health and write about different components of one health.

(OR)

What is the role of a veterinarian in promotion of public health?



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<b>2<sup>nd</sup> Semester</b>	1.	English	Language	3+0=3
	2.	Telugu	Language	3+0=3
	3.	Pet and zoo animal management	Skill enhancement course	2+0=2
	4.	Dairy farm general management	Skill enhancement course	2+0=2
	5.	Veterinary Anatomy	Major subject	4+0=4
	6.	Veterinary Physiology	Major subject	4+0=4
	7.	Livestock production and management	Minor subject	3+1=4
<b>Total</b>				<b>21+1=22</b>
<p style="text-align: center;"><b>Community service project of 180 hours with 4 credits.</b>  <b>Student is eligible for Exit option-1 with the award of Certificate</b></p>				

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**English**  
**(Credits 3+0=3)**

**UNIT - I**

- Poetry : 1.Ulysses Alfred Lord Tennyson
- Skills 2. Vocabulary: Conversion of Words
3. One Word Substitutes
- 4.Collocations

**UNIT - II**

- Prose : 1. The Best Investment I Ever Made A.J.Cronin
- Non-Detailed Text: 2. Florence Nightingale Abrar Mohsin
- Skills 3. Skimming and Scanning

**UNIT - III**

- Prose: 1. The Night Train at Deoli Ruskin Bond
- Poetry Skills: 2. Stopping by Woods on a Snowy Evening
- 3.Reading Comprehension (Top Down, Bottom Up and Schema Theory)
4. Note Making/ Taking Robert Frost

**UNIT - IV**

- Poetry: 1. Night of the Scorpion Nissim Ezekiel
- Skills 2. Expansion of Ideas
- 3.Notices, Agendas and Minutes

**UNIT - V**

- Non-Detailed Text Skills : 1.An Astrologer's Day RK Narayan
2. Curriculum Vitae and Resume
3. Letters
- 4.E-Correspondence

**References:**

1. Communication Skills (2nd Edition), Sanjay Kumar &PushpLata, Oxford University Press, 2016.
2. The New Oxford Guide to Writing, Thomas. S. Kane,

3. Reading Skills: How to Read Better and Faster- Speed Reading, Reading Comprehension & Accelerated Learning (2nd Edition), Nick Bell.

4. English Vocabulary in Use: Upper Intermediate, Cambridge University Press.

**Activities:**

Asking the students to prepare a model resume.

Quiz on one word substitutes.

Collocation pair activity.

Asking the students to read news clippings and make notes.

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**Telugu**  
**(Credits 3+0=3)**

**పాఠ్య ప్రణాళిక**

**I. వ్యక్తీకరణ నైపుణ్యాలు**

- భాష- నిర్వచనాలు, లక్షణాలు
- భాష- ఆవశ్యకత, ప్రయోజనాలు
- భాష – ఉత్పత్తి వాదాలు
- వర్ణం - పదం – వాక్యం

**II. అనువాద రచన**

- అనువాదం - నిర్వచనాలు, ఆవశ్యకత
- అనువాద పద్ధతులు
- అనువాద సమస్యలు - బొగోళ, భాష, సాంస్కృతిక సమస్యలు.
- అభ్యాసం ఆంగ్లంనుంచి తెలుగుకు, తెలుగు నుంచి ఆంగ్లానికి ఒక 'పేరా' అనువాదం చేయడం

**III. మాధ్యమాలకు రచన**

- పత్రికా రచన – వార్తారచన, సంపాదకీయం, సమీక్ష
- శ్రవ్య మాధ్యమం – రేడియో రచన (కథ), podcast (డాక్యుమెంటరీ)
- దృశ్య మాధ్యమం – టెలివిజన్ (కెమెరా) రచన [రూపకం (Skit), వాఙ్మూలం (Anchoring)]
- ముద్రణా మాధ్యమ / శ్రవ్య మాధ్యమ / దృశ్య మాధ్యమ రచన విద్యార్థుల చేత చేయించడం

**IV. తెలుగు వ్యాస రచన**

- తెలుగు వ్యాసం - నిర్వచనాలు, లక్షణాలు
- సాక్షి వ్యాసం – స్వభాష
- ఉపాధ్యాయ ఉవాద – మునిమాణిక్యం నరసింహారావు
- విద్యార్థి చేత వ్యాస రచన చేయించడం

**V. తెలుగు సాంకేతికత**

- తెలుగు లిపి పరిచయం - యూనికోడ్
- తెలుగు వికీపీడియా
- సామాజిక మాధ్యమాల్లో తెలుగు
- ('ఇ' పత్రికలు, వెబ్సైట్లు, బ్లాగు)
- తెలుగు వికీపీడియాలో మార్పులు చేర్పులు విద్యార్థుల చేత చేయించడం/
- సామాజిక మాధ్యమాల్లో తెలుగు రచనలు చేయించడం

**• ఆధార గ్రంథాలు/వ్యాసాలు**

1. వ్యక్తీకరణ నైపుణ్యాలు - 1. ఆధునిక భాషాశాస్త్ర సిద్ధాంతాలు - ఆచార్య పి. ఎన్. సుబ్రహ్మణ్యం
2. తెలుగు భాషా చరిత్ర – (సం.) ఆచార్య భద్రరాజు కృష్ణమూర్తి
3. తెలుగు వాక్యం – ఆచార్య చేకూరి రామారావు,
2. ఉత్తమ కవిత-లక్షణాలు - నవ్యకవిత్వ లక్షణములు - ఆచార్య సి. నారాయణరెడ్డి
- ఆధునికాంధ్ర కవిత్వము-సంప్రదాయములు, ప్రయోగములు, చతుర్థ ప్రకరణము.

3. ఉత్తమ కథ - లక్షణాలు - కథాశిల్పం-వల్లంపాటి వెంకటసుబ్బయ్య, పుటలు 11-17.
4. తెలుగు కథానిక - స్వరూప స్వభావాలు - పోరంకి దక్షిణమూర్తి
5. ఉత్తమ వ్యాసం లక్షణాలు - చదువు - సంస్కృతి (వ్యాసం) - కొడవటిగంటి కుటుంబరావు
6. తెలుగు వ్యాస పరిణామం - ఆచార్య కొలకలూరి ఇనాక్
7. అనువాద రచన - 1. అనువాద సమస్యలు - రాచమల్లు రామచంద్రారెడ్డి (పుటలు 61-75, 85-94)  
2. అనువాదన పద్ధతులు - ఆచరణ సమస్యలు-చేకూరి రామారావు.  
"భాషాంతరంగం", తెలుగు విశ్వవిద్యాలయ ప్రచురణ. (పుటలు 130-146,)
8. ముద్రణా మాధ్యమం - మాధ్యమాలకు రచన (పుటలు 9-12)  
డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ
9. పత్రికా భాష - మాధ్యమాలకు రచన (పుటలు 67-74)

- డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ
10. పత్రికా రచన - తెలుగు మాలికాంశాలు (పుటలు 59-69)  
డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ
11. ప్రసార మాధ్యమాలు- మాధ్యమాలకు రచన (పుటలు 3-10)  
డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ
12. రేడియో రచన - మాధ్యమాలకు రచన (పుటలు 141-148)  
డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ  
- చూ. మాధ్యమాలకు రచన (పుటలు 141-148)
13. వ్యాఖ్యానం (యాంకరింగ్) - మాధ్యమాలకు రచన (పుటలు 178-181)  
డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ
14. టెలివిజన్ రచన - మాధ్యమాలకు రచన (పుటలు 153 -160)  
డా॥ బి.ఆర్. అంబేద్కర్ విశ్వవిద్యాలయ ప్రచురణ
15. తెలుగు జర్నలిజం - డా॥ బూదరాజు రాధాకృష్ణ

#### నూచించబడిన సహపాఠ్య కార్యక్రమాలు

1. భాషాంశాలపై, వాక్య నిర్మాణంపై అప్రెన్సిస్ ట్రైనింగ్ రాయించడం; పత్రికల్లోని సాహిత్య/భాషాంశాలను సేకరింపజేయడం.
2. విద్యార్థులచేత తెలుగు భాషా సాహిత్యాలపై ప్రసంగ వ్యాసం ఇప్పించడం (సెమినార్, అప్రెన్సిస్)
3. వ్యాసరచన, లేఖారచన, స్వీయ కవితలు రాయించి తరగతిలో చదివించడం
4. వివిధ కార్యక్రమాల్లో విద్యార్థులచేత సదస్సు నిర్వహణ, వ్యాఖ్యానం (యాంకరింగ్) చేయించడం.
5. సమకాలీన భాషాసమస్యలపై / ఉద్యమాలపై/సాంఘిక సమస్యలపై 'బృందచర్చ' (Group Discussion)
6. తెలుగుభాషా దినోత్సవం/అంతర్జాతీయ మాతృభాషా దినోత్సవం మొదలైన రోజుల్లో జరిగే సాంస్కృతిక కార్యక్రమాలు విద్యార్థులచేత నిర్వహించడం, వాటిపై సమీక్షలు/పత్రికా ప్రకటనలు రాయించడం.

7. సమకాలీన సంఘటనలపై సామాజిక మాధ్యమాల్లో/ టి.వి.ల్లో జరిగే చర్చలను నమోదు చేసి సంకలనం చేయడం.

8. సాంస్కృతిక / చారిత్రక ప్రాశస్త్యం కలిగిన కట్టడాలు, దేవాలయాలు, కళానిలయాలను 'బృందపర్యటన/ క్షేత్ర పర్యటన' ద్వారా విద్యార్థులచేత సందర్శింపజేయడం.

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**Pet and zoo animal management**  
**(Credits 2+0=2)**

**UNIT – 1**

Important breeds of dogs and cats. Feeding of dogs, cats, deworming & vaccination schedule

Dog show: preparation for show, kennel clubs, important characteristics for judgment.

**UNIT – 2**

Utility of dogs- guarding, defense, patrolling, riot control, scouting, espionage, mine detection, tracking, guiding, hunting, races, retrieving rescue and other uses.

**UNIT – 3**

conservation practices of wild life in India.

Basic principles of habitat and housing of various classes of wild zoo animals. 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.

Reference books:

1. Animal care Kimberly Lord
2. Animal behaviour, welfare and managaement Geoff Hosey
3. Dictionary of zoo biology and animal management Paul A Rees
4. Small animal care and management Dean warren

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**(Credits 2+0=2)**  
**Model paper**

Time: 1 ½ hrs

Maximum: 50marks

**SECTION – A**

Answer any Four questions. Each question carries five marks. (4\*5 =20)

1. What are the various dog breeds used for guarding purpose. Explain their characteristic.
2. Explain the conservative practices of wild life in India
3. Explain the principles of feeding of pet dogs.
4. What is dog show. Explain the guidelines and procedure for conducting dog show.
5. Describe the management of a sanctuary.
6. Name the important cat breed and describe their characteristics.
7. Name some zoo animals and explain the basic principles of their habitat.

**SECTION – B**

Answer any three Questions. Each question carries ten marks (3\*10 =30)

1. List out the Dog breeds used for patrolling purpose. Explain their characteristics.
2. Explain in detail the feeding habits of captive animals.
3. Classify zoological parks. Name the zoological parks in India.
4. Name different toy breeds and describe their characteristics.
5. What are the various methods of restraining of captive animals.



**ANDHRA UNIVERSITY**  
**B.Vocational course**  
**Dairying & Animal husbandry (Honours)**  
**I Year – Semester II**  
**2023-24 Admitted batch**  
**Dairy farm general management**  
**(Credits 2+0=2)**

**UNIT – 1**

Economic dairy farming. Housing for dairy animals – objectives, advantages of adequate housing, selection of site and layout of dairy farm, Different systems of housing. Day to day practices- equipment

**UNIT – 2**

Transport of dairy animals. Care of newly born calf. Care and management of heifers, pregnant animals, dry stock, breeding bulls.

**UNIT – 3**

Sanitary milk production. Common dairy farm management practices viz.marking, dehorning/ disbudding, age determination, grooming etc.

**Reference books:**

1. A Text Book of Livestock Production and Management Shraddha Shrivastava, V. Gautam
2. LIVESTOCK PRODUCTION MANAGEMENT Dr. Nilotpal Ghosh
3. Livestock Production Management NSR SASTRY, CK THOMAS

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**2023-24 Admitted batch**  
**Dairy farm general management**  
**(Credits 2+0=2)**  
**Model paper**

Time: 1 ½ hrs

Maximum:50marks

**SECTION – A**

Answer any Four questions. Each question carries equal marks. (4x5m=20)

1. Write in detail about care of new born calf.
2. Write in detail about transport of animals.
3. Write in detail about care of pregnant animals.
4. Write in detail about clean milk production.
5. Write in detail about layout of dairy farm.
6. Write in detail about dehorning.
7. Write in detail about dentition and age determination in farm animals.

**SECTION – B**

Answer any Three questions. Each question carries ten marks (3x10m=30)

1. Write in detail about housing of dairy animals, objectives, advantages of adequate housing.
2. Write in detail about day to day practices in dairy farm and also equipment used.
3. Write in detail about an economic dairy farm.
4. Write in brief about site selection and different housing systems.
5. Write in detail about care and management of breeding bulls and dry stock.

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**VETERINARY ANATOMY**  
**(Credits 4+0=4)**

**UNIT - 1**

Study of skeletal system and different bones of cow. Study of different joints. Study of muscles of different regions of the body (**excluding origin, insertion, blood supply & nerve supply**).

**UNIT – 2**

Splanchnology. Study of different boundaries of thoracic, abdominal and pelvic cavities. Study of digestive systems of cow. Study of salivary glands, liver, pancreas, and spleen. Study of respiratory system and urinary system. Study of male and female genital systems. Study of mammary gland of cow.

**UNIT – 3**

Study of skeletal system of dog. Study of digestive, respiratory, and urogenital systems of dog and poultry.

**UNIT-4**

Angiology. Study of heart and systemic circulation. Study of major blood vessels. Blood supply to Brain and different internal organs. Lymphatic system. Position of different lymph nodes.

**UNIT-5**

Neurology. Study of neuron, nerve trunk, meninges, brain and spinal cord. Study of cranial nerves, spinal nerves, brachial plexus, lumbo sacral plexus.

**PRACTICALS**

- Demonstration of bones of different species.
- Demonstration of organs of digestive, respiratory and urogenital systems.
- Study of rumen, reticulum, omasum and abomasum of ox.
- Study of digestive system of dog.
- Study of digestive system of poultry
- Identification of boundaries of thoracic, abdominal and pelvic cavities

**Reference books:**

- Text book of Veterinary Anatomy - R.K.Ghosh
- Text book of Veterinary Anatomy - K.M.Dyce
- Introduction to Veterinary Anatomy - Victoria Aspinall BVSc MRCVS, Melanie Cappello BSc(Hons)

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**Dairying & Animal husbandary - Honours**  
**I Year – Semester II**  
**2023-24 Admitted batch**  
**VETERINARY ANATOMY**  
**(Credits 4+0=4)**  
**Model paper**

**Time: 3 hrs**

**Maximum: 75marks**

**SECTION – A**

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

1. Write about salivary glands of cow. What are the functions of saliva.
2. What is pelvic cavity? Explain in detail.
3. Explain the location of various organs in thoracic cavity.
4. List out the cranial nerves, blood vessels and lymph nodes of head and neck region
5. Draw the diagram of digestive system of dog, label the parts and explain in brief the different parts.
6. Write in detail about respiratory system of poultry.
7. Write in detail about mammary gland in cow.
8. Write in detail about various parts of bovine skull.

**SECTION – B**

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

1. A) write the borders of abdominal cavity and what are the various organs located in the abdominal cavity.

(or)

B) Explain the structure of Femur and Humerus with the help of diagrams.

2. A) Explain the bones of hind limb in dog.

(or)

B) explain in detail about respiratory system of cow.

3. A) Describe the digestive system of poultry.

(or)

B) Describe the stifle joint of ox.

4. A) write in detail about sense organs.

(or)

B) What is brachial plexus. Explain in detail.

5. A) Draw the diagram of female reproductive system of ox and label the different components.

(or)

B) Explain the structure of heart with the help of a well labelled diagram.

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**I Year – Semester II**  
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**VETERINARY PHYSIOLOGY**  
**(Credits 4+0=4)**

**UNIT - 1**

Erythropoiesis, factors influencing erythropoiesis, fate of R.B.C;

Hemoglobin-chemical structure, physiological functions, derivatives of hemoglobin; Leucocytes, differential leucocyte count. Thrombocytes, Haemorrhage, hemostasis, Blood groups.

**UNIT - 2**

Physiology of the gastrointestinal tracts of ruminants and monogastric animals

Prehension, defecation; vomition; function of saliva, stomach, intestine, pancreas; bile secretion; hunger, appetite control, developmental aspects of digestion.

Oesophageal groove, rumination, fermentation.

**UNIT – 3**

Physiology of respiration and mechanics of breathing. Transport of blood gases, foetal and neonatal oxygen transport. Physiology of excretory system, nephron structure, urine formation.

**UNIT - 4**

Introduction and basics of endocrinology. Major endocrine glands and their hormones. Hormones and their action on different systems of the body.

**UNIT-5**

Physiology of Puberty. Physiology of reproduction in male, spermatogenesis. Physiology of reproduction in female, folliculogenesis, ovulation, estrus cycles. Mating behaviour, fertilization, parturition. Lactation.

**PRACTICALS**

1. Collection of blood samples - Separation of serum and plasma
2. Enumeration of erythrocytes.
3. Enumeration of leucocytes.
4. Differential leucocytic count.
5. Platelet count.
6. Estimation of haemoglobin.
7. Haematocrit - erythrocyte sedimentation rate - packed cell volume - coagulation time- bleeding time .
8. Counting of rumen motility
9. Urine analysis-physiological constituents and pathological determinates
10. Behavioural signs of oestrus.

11. Sperm motility.
12. Sperm concentration -live and dead - abnormal sperm count.
13. Health parameters of animals- body temperature, pulse, respiration and heart rate.

**Reference books:**

- Textbook of Veterinary Physiology - Bradley Klein, Elsevier
- Animal physiology - M. Armugam, A. Mariakuttukam
- Physiology of domestic animals - Dukes
- Text book of Veterinary physiology - B.Bhattacharya

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**2023-24 Admitted batch**  
**VETERINARY PHYSIOLOGY**  
**(Credits 4+0=4)**  
**Model paper**

Time: 3hrs

Maximum: 75 marks

**SECTION – A**

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

1. Write in detail about erythropoiesis and fate of RBC
2. Functions of saliva in ruminant and monogastric animals
3. Write in detail about structure of nephron and various factors affecting glomerular filtration rate.
4. Explain oesophageal groove.
5. What is estrus cycle? Briefly explain estrus behaviour.
6. Explain briefly about milking reflex in a cow.

**SECTION – B**

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

1. A) Explain esophageal groove reflex (or)  
B) Describe in detail the hormones secreted by Hypothalamus
2. A) Explain the transport of blood gases  
(or)  
B) Define hemorrhage. Explain in detail about mechanism of blood coagulation
3. (A)What are the functions of kidney? Draw the structure of nephron&explain.  
(or)  
B) write in detail about thermoregulation in scrotum.
4. A) write in detail about spermatogenesis.  
(or)  
B) Write down the endocrine activity of GIT.
5. A) What are the functions of bile  
(or)  
B) Explain in detail about lactogenesis in cow.



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**Dairying & Animal husbandary - Honours**  
**I Year – Semester II**  
**2023-24 Admitted batch**  
**LIVESTOCK PRODUCTION AND MANAGEMENT**  
**(Credits 3+1=4)**

**UNIT – 1**

Status of livestock in Vedic period, medieval period and modern period, Demographic distribution of livestock, Identification of animal

**UNIT – 2**

Transportation of livestock, Transportation of wild and zoo animals, Common farm animal management practices, Housing systems, Design of different buildings for livestock, General principles of the design and construction of livestock houses.

**UNIT -3**

General management and feeding practices of calves, heifers, pregnant, lactating and dry animals, bulls and working animals. Breeding schedule and management of ram and buck. Introduction to methods of drug administration.

**UNIT – 4**

Common vices of animals, their prevention and care. Animal holding and land holding patterns of India. Organic livestock production.

**UNIT – 5**

Judging and BSC for body parts of livestock, Preparation of animals for show

Culling of animals, selection and purchase of livestock, Methods of milking and precautions.

**PRACTICALS:**

1. Visit to different animal farms and Identification of various breeds of cattle, buffalo, sheep and Goat.
2. Identification of common tools used on animal farm.
3. Familiarization with body points of animals.
4. Methods of identification (marking, tattooing, branding, tagging and electronic chip under pre emptive analgesia).
5. Use of rope for knot and halter making. Dentition and ageing of animals.
6. Preparation of animals for show and judging. Selection and culling of animals.
7. Clipping, shearing, dipping, spraying and spotting sick animals.
8. Determination of body weight using different methods

**Reference books:**

- A Text Book of Livestock Production and Management - Shraddha Shrivastava, V.N.Gautam
- LIVESTOCK PRODUCTION MANAGEMENT - Dr. Nilotpal Ghosh
- Livestock Production Management - NSR SASTRY, CK THOMAS
- Livestock Production - JAVED K, INTECH
- Livestock Production And Management - Pankaj Kumar Singh, Thakur, Krishna Shankar Rao
- Advances In Livestock Production Management - Sunil Kumar, Birendra Kumar, Misra And Manish Kumar

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**I Year – Semester II**  
**2023-24 Admitted batch**  
**LIVESTOCK PRODUCTION AND MANAGEMENT**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75 marks

**SECTION – A**

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

1. Describe the care and management of dry animals
2. What are the precautions to be followed while milking.
3. Explain the disinfection procedure of dairy farm and what are the various disinfectants used.
4. What are the common vices of animals. Explain any five vices in detail
5. Explain about feeding of calves.
6. What are the common vices of animals and how to prevent them.
7. What is quarantine? Explain in detail.
8. Expand INAPH and explain in detail.

**SECTION – B**

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

1. A) What do u mean understand by organic livestock production? Write the considerations for organic livestock production.

(or)

B) What is livestock show. Explain the procedure for conducting livestock show and judging of animals.

2. A) Describe the breeding schedule and management of ram and buck.

(or)

B) What are the various methods of drug administration in livestock.

3. A) What are the various methods of identification of livestock.

(or)

B) Describe the rules of transportation of livestock.

4. A) Write the various methods for disposal of carcass.

(or)

B) Write about different housing systems of cattle and buffalo.

5. A) Explain in detail the procedure for culling of animals.

(or)

B) Write in detail about selection of site for establishing a dairy farm

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**II Year – Semester III**  
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<b>3<sup>rd</sup> Semester</b>	1.	Introduction to public administration	Multi-disciplinary course	2+0=2
	2.	Veterinarian in society	Skill enhancement course	2+0=2
	3.	Animal genetics and breeding	Major subject	3+1=4
	4.	Basics of Animal nutrition	Major subject	3+1=4
	5.	Veterinary public health and food safety	Major subject	3+1=4
	6.	Veterinary immunology and vaccines	Major subject	3+1=4
	7.	Fodder production and conservation	Minor subject	3+1=4
<b>Total</b>				<b>19+5=24</b>

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**II Year – Semester III**  
**2023-24 Admitted batch**  
**INTRODUCTION TO PUBLIC ADMINISTRATION**  
**(Credits 2+0=2)**

**Unit: I**

1. Introduction to Public Administration - Woodrow Wilson - Definition and nature and scope of public administration - Significance - Distinction between public and private administration

**Unit: II**

2. All India Services - Central Services - State Services - Importance of All India Services UPSC & SPSCs Powers and Functions - NITI Aayog

**Unit: III**

3. Accountability of Administration in India - Legislative - Executive – Judiciary - Judicial Activism - E-Governance in India - Good Governance initiatives – Functions and roles of Administrators

References:

1. Public Administration by Awasthi & Maheswari
2. Indian Administration by Maheswari
3. Administrative Theories by Mohit Bhattacharya
4. Comparative Administration by Mohit Bhattacharya
5. Indian Government & Politics by B.L.Fadia

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**Dairying & Animal husbandary - Honours**  
**II Year – Semester III**  
**2023-24 Admitted batch**  
**VETERINARIAN IN SOCIETY**  
**(Credits 2+0=2)**

**UNIT-1**

Man, animal and society, Client dealing, Client oriented approach to physical examination of animals, veterinary public health as component of society, Human animal bond.

**UNIT-2**

Veterinarians interaction with health, drug and food regulatory authorities.  
Social responsibilities of Veterinarians in public hospital and practice management  
Professional development. Prevention activities.

**UNIT-3**

Disaster management. Role of the Veterinary services in food safety. Role of Veterinarian in Natural calamities.

**References:**

<https://www.drvet.in/p/e-books.html>

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**II Year – Semester III**  
**2023-24 Admitted batch**  
**VETERINARIAN IN SOCIETY**  
**(Credits 2+0=2)**

**Model Paper**

Time: 1 ½ hrs (90 minutes)

Maximum:50marks

**SECTION–A**

Answer any **Four** questions. Each question carries five marks.

(4\*5=20)

- 1) Write in detail about physical examination of an animal?
- 2) Name some veterinary institutes?
- 3) What are the food regulatory authorities?
- 4) What are the drug regulatory authorities?
- 5) What are the important components of client dealing?
- 6) Benefits of pets for people?
- 7) Write in detail about meat inspection?

**SECTION–B**

Answer any three Questions. Each question carries ten marks

(3\*10=30)

- 1) Write in detail about societal responsibilities of Veterinarians?
- 2) Define Public health? Discuss in detail about role of Veterinarian and Public health?
- 3) What are Natural calamities? Role of Veterinarian in Natural calamities?
- 4) Role of Veterinarian in food safety?
- 5) Write in detail about prevention activities before disaster seasons. And write down response activities also.



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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**II Year – Semester III**  
**2023-24 Admitted batch**  
**ANIMAL GENETICS AND BREEDING**  
**(Credits 3+1=4)**

**UNIT - 1**

Introduction and importance of statistics and their function  
Definitions, collection and classification of data  
Presentation of data.  
Theory of sampling

**UNIT - 2**

Introduction to genetics, applications, history of genetics  
Chromosome structure, numbers, Cell division- mitosis, meiosis, Gametogenesis- spermatogenesis, oogenesis

**UNIT - 3**

Mendel's experiments, exceptions to mendel's experiments  
Modified mendelian inheritance, Multiple alleles, Sex linked inheritance  
Crossing over

**UNIT – 4**

Mapping - Chromosome mapping, genetic map  
Changes in genetic material- mutations, Gene concept

**UNIT - 5**

Animal breeding – introduction, Selection, Systems of breeding- inbreeding, grading, crossbreeding, outcrossing. Economic traits and their importance

**PRACTICALS**

1. Monohybrid, Dihybrid cross and Multiple alleles.
2. Modified Mendelian inheritance and sex-linked inheritance.
3. Linkage and crossing over.
4. Demonstration of Karyotyping in farm animals.
5. Calculation of gene and genotypic frequencies
6. Estimation of repeatability, heritability, genetic and phenotypic correlations.
7. Estimation of inbreeding and relationship coefficient.

**Reference books:**

- Textbook of Animal Genetics and Breeding - Nada Ben Abdallah
- Text Book On Animal Genetics Breeding - H K B Paresh, P N Srivastava, B C Sarkhel
- Animal Genetics and Breeding - Dr Arun Kumar Tomar, Dr Rajbeer Singh
- Textbook Of Animal Breeding - Dr. S. S. Tomar
- Animal Breeding - Gerald Weiner
- Veterinary Genetics - F.W. Nicholas
- Genetics of Livestock Improvement - John F. Lasley
- Breeding and improvement of farm animal - Warwick, E.J. and Legates, J.E.

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**ANIMAL GENETICS AND BREEDING**  
**(Credits 3+1=4)**

**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. What are the economic traits in poultry and write their importance?
2. What is selection? Write in detail.
3. What are multiple alleles write in detail.
4. Draw neat diagram of structure of chromosome and explain
5. Write in detail about importance of statistics
6. What is theory of sampling write in detail.
7. Write down differences between mitosis and meiosis?
8. Write in detail about oogenesis?

**SECTION – B**

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

1. Write in detail about collection, classification and presentation of data?  
Or  
Write in detail about history and applications of genetics?
2. What is cell division, write in detail about events of cell division with neat diagrams.  
Or  
What is gametogenesis? Write in detail about the process of spermatogenesis.
3. Write in detail about sex linked, sex influenced & sex-limited inheritance?  
Or  
Write in detail about linkage and crossing over?
4. Write in detail about chromosomal mapping  
Or  
Write in detail about mutations.
5. Write about the systems of breeding in detail.  
Or  
Write down the economic traits in cattle and their importance

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**II Year – Semester III**  
**2023-24 Admitted batch**  
**BASICS OF ANIMAL NUTRITION**  
**(Credits 3+1=4)**

**UNIT – 1**

Carbohydrates – sugars- soluble carbohydrates- crude fiber – non starch polysaccharides – energy – gross energy- digestible energy- metabolized energy- starch equivalent.

**UNIT – 2**

Protein in animal nutrition, true protein, crude protein, amino acids, essential & non-essential amino acids, biological values

**UNIT -3**

Lipid nutrition, essential fatty acids, omega fatty acids

**UNIT – 4**

Minerals in animal nutrition, major & minor minerals

Vitamins, fat- & water-soluble vitamins – roles, deficiency symptoms, sources of vitamins

**UNIT – 5**

Compound feeds, feed supplements, feed additives

General consideration while feeding of various spp of livestock products, dairy cattle and buffalo, sheep, goat, pig, poultry.

Special consideration in the nutrition of different livestock species, ruminants – non-ruminants – poultry

**PRACTICALS**

1. General acquaintance of various equipment in Nutrition laboratory – Hot air oven – Kjeldal Digestion and Distillation Unit – Soxhlet Apparatus – Muffle furnace.
2. Estimation of various proximate principles in feed – Moisture – Crude protein – Etherextract – Crude fibre – Total Ash.
3. Estimation of Acid Insoluble Ash – Calcium – Phosphorus
4. Detection of common adulterants in feeds.
5. Feed formulation – Ration formulation – practical exercises
6. Visit to Cattle feed plant and Poultry feed plant.

**References:**

- Principles of animal nutrition and feed technology - D.V.Reddy
- Principles and practices of animal nutrition - Jagadish Prasad
- A textbook of animal nutrition - D.N. verma, kalyani
- Basic animal nutrition and feeding - Pond, Wiley
- Animal nutrition - Maynard
- Principles of animal nutrition and feeds – Bane

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**II Year – Semester III**  
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**BASICS OF ANIMAL NUTRITION**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. What are the functions of Calcium, its deficiency symptoms.
2. Name the essential Amino Acids.
3. What are the functions of fats in the Animal Body? What are essential fatty acids?
4. What are soluble carbohydrates?
5. What are the Omega fatty acids?
6. Name the essential amino acids.
7. Name the minor minerals.
8. What are feed additives?

**SECTION – B**

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

1. Write about functions, deficiency symptoms and sources of fat-soluble vitamins.

Or

Classify feed ingredients and give one example to each category.

2. Describe about feeding of laying poultry.

Or

Discuss the role of water in the animal body system.

3. What are the different types of energy? Explain their importance

Or

Describe about different types of commercial pet foods.

4. What are agro industrial byproducts? Give five examples along with significance of each byproduct in animal nutrition.

Or

Importance of salt in the animal diet.

5. Write about different feed processing methods

Or

Explain the special consideration in the nutrition of ruminants and non-ruminants.

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**II Year – Semester III**  
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**VETERINARY PUBLIC HEALTH AND FOOD SAFETY**  
**(Credits 3+1=4)**

**UNIT: 1**

HACCP: Hazard Analysis and Critical Control Point. Objectives of Implementing HACCP. Guidelines for the application of the HACCP system

**UNIT: 2**

Milk hygiene in relation to public health. Hygienic and safe milk production practices including steps for prevention and control of milk contamination, adulterants, antimicrobial residues, agrochemicals, subclinical mastitis or udder infections etc.

**UNIT: 3**

Microbial flora of milk and milk products. Milk plant and dairy equipment hygiene. Quality control of milk and milk products. Milk hygiene practices in India

**UNIT: 4**

Elements of meat inspection and meat hygiene practices. Pathological conditions associated with the transport of food animals. Hygiene in abattoirs and meat plants.

Detection of conditions or diseases and judgements during ante mortem and post mortem inspection.

**UNIT: 5**

Classification of low risk and high-risk material generated in an abattoir and its hygienic disposal. Inspection of poultry for human consumption. Occupational health hazards in abattoir and meat plants. Foodborne infections and intoxications associated with foods of animal origin. Toxic residues (pesticides, antibiotics, metals and hormones) in foods and associated health hazard

**PRACTICALS**

1. Collection of samples for chemical and bacteriological examination.
2. Grading of milk by dye reduction test, direct microscopic examination and standard plate count. Quality assurance tests for processed milk and milk products.
3. Tests for plant sanitation-Air, water and equipment.
4. Detection of organisms of public health significance from food products by techniques.
5. Tests for detection of mastitic milk.
6. Ante-mortem and post-mortem inspection of food animals.
7. Demonstration or detection of toxic chemicals and contaminants of public significance from milk and meat.
8. Detection of antimicrobial residues in milk and meat by microbiological and analytical techniques.
9. Demonstration of speciation of meat

**Reference books:**

1. Textbook of elements of veterinary public health - A.T. Sherikar, V.N. Bachhil & D.C. Thapliyal

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**II Year – Semester III**  
**2023-24 Admitted batch**  
**VETERINARY PUBLIC HEALTH AND FOOD SAFETY**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. What are the different spoilage microflora and spoilage conditions of milk?
2. Differentiate the synthetic milk from natural milk?
3. Write different abnormal conditions detected in meat?
4. Enlist different indirect tests for microbiological analysis in the dairy industry and explain about any dye reduction test?
5. Write about the emergency slaughter of animals?
6. What are the different adulterants used in milk? Explain method of detection for any two commonly used adulterants at field level.
7. What are the different disease conditions need to be observed during postmortem inspection of poultry?
8. What are the basic principles of food safety?

**SECTION – B**

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

- 1 Classify different types of food borne illness and describe about any meat borne disease?

or

What are the different sources of contamination in milk production. Describe about different steps involved in Clean milk production?

- 2 Enlist different methods for identification of fraudulent substitution of meat and explain in detail about any method?

or

Define HACCP? Write about the principles of HACCP.

- 3 What are the different occupational health hazards encountered by slaughter house workers and write in detail about the preventive measures.

or

Discuss in detail about different facilities required for ante mortem inspection. What are the different judgments given in ante mortem inspection.

4 Define one health and write about different components of one health.

or

Write in detail about the different methods for safe disposal of abattoir wastes.

5 What is the role of a veterinarian in promotion of public health?

or

Discuss in detail about different approaches you recommend a farmer regarding safe and hygienic production of animal-based foods (milk, meat & eggs) in your own words

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**Dairying & Animal husbandary - Honours**  
**II Year – Semester III**  
**2023-24 Admitted batch**  
**VETERINARY IMMUNOLOGY AND VACCINES**  
**(Credits 3+1=4)**

**UNIT - 1**

Types of Immunity, Antigen, types of antigens, blood group antigens, Factors determining antigenicity, Immunoglobulin (antibody)- structure of antibody, classes of immunoglobulins

**UNIT - 2**

Hypersensitivity: classification and mechanism of induction

**UNIT - 3**

Autoimmunity, Immunotolerance

**UNIT – 4**

Concept of Immunity to Microbes, Immunity to bacteria, immunity to fungi and virus, immunity to parasites

**UNIT - 5**

Vaccines- preparation, cold chain maintenance and handling, test for potency, types of vaccines

**Practicals:**

1. Visit and appraisal of Veterinary biological institute.
2. To attend vaccination programmes in field.
3. Vaccines – preparation and cold chain maintenance
4. Different types of vaccines – its advantages and disadvantages
5. ABO blood typing
6. Types of antibodies
7. Structure of antigen and antibody

**Reference books:**

1. Veterinary Immunology - Ian R Tizard, Elsevier Science
2. Immunology: Basic Concepts and Applications - Y. Haribabu
3. Veterinary Immunology: Principles & Practice - Day, Manson Pub
4. Vaccines for Veterinarians - Ian R Tizard
5. Vaccine Science And Immunization Guideline - ROCKWELL P G, SPRINGER



**ANDHRA UNIVERSITY**  
**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**II Year – Semester III**  
**2023-24 Admitted batch**  
**VETERINARY IMMUNOLOGY AND VACCINES**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks.

(5\*5 =25)

1. What are antibodies? Differentiate between antigen and antibody.
2. What are the functions of complement?
3. Mention different types of antigens.
4. Explain RH system and erythroblastosis foetalis
5. Write in detail about biological barriers.
6. What are the differences between humoral and cell mediated immunity?
7. What is phagocytosis? Explain.
8. Explain mechanism of induction and tissue damage in auto immune diseases

**SECTION – B**

Answer **all** questions. Each question carries **TEN** marks

(5\*10 =50)

1. Write about cardinal features of adaptive immune responses

(or)

What are different types of immunoglobulins. Write their functions in detail.

2. Write in detail about concept of immunity to microbes.

(or)

Write in detail about types of immunity.

3. What is an antigen. Write in detail about the factors determining antigenicity.

(or)

What is auto immunity? Write in detail the factors associated with auto immunity along with general characteristics and treatment of auto immune diseases.

4. What is vaccine. Write in detail about preparation, storage, safety and maintenance of vaccines

(or)

Write in detail about different types of vaccines.

5. Explain the structure of immunoglobulin.

(or)

What are the different types of hypersensitivity? Give one example for each.

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**2023-24 Admitted batch**  
**FODDER PRODUCTION AND CONSERVATION**  
**(Credits 3+1=4)**

**UNIT – 1**

Difference between fodder and forage, classification of forage based on season of cultivation, nutrient density in the dry matter, plant types, crop duration and plant family and duration of the crop. Plant sources of animal feed

**UNIT – 2**

Characteristics of fodder crops, cereal fodder - cereal fodder crops for irrigated condition, cereal fodder for rainfed condition, cereal fodder for hilly/temperate zone, cultivation methods. Grass fodders, grasses for irrigated conditions, choice of grasses for rainfed conditions, cultivation methods. Legumes, irrigated legumes – perennial, irrigated legumes – annual, legume fodders for rainfed conditions, rainfed legumes – perennial, rainfed legumes – annual, cultivation methods.

**UNIT – 3**

Fodders for silvipasture system Trees, Multi purpose tree species, Nutritive value of common tree leaves.

**UNIT - 4**

Conservation of fodder, silage, characteristics and various types of silo pits, Crops used for silage making, Steps in the preparation of forage for making silage, Advantages and disadvantages of silage, haylage and wastelage, hay, principles of hay making, requisites of good quality hay, Types of hay, advantages and disadvantages of hay, legume and non legume hay, steps in hay making, loss of nutrients in hay making, storage of hay, losses in storage, factors affecting feed value and deterioration.

**UNIT – 5**

Scarcity fodders - failed crops, crop residues, Vegetable crop residues, Non traditional plants, Plant oriented wastes, agro- industry wastes and other unconventional feeds, Vegetable and animal protein sources.

Agro- industry wastes and other unconventional feeds

**PRACTICALS:**

1. Cultivation methods of cereal fodders
2. Cultivation methods of grass fodders
3. Cultivation methods of legume fodders
4. Preparation of silo pits
5. Preparation of hay

**References:**

Production and Grassland Management for Veterinarians - D.V.Reddy  
Forages and Livestock Production - Pathak, N.N. and Jakhmola, R.C.

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**FODDER PRODUCTION AND CONSERVATION**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. What is the importance of land preparation for fodder cultivation.
2. Explain different Plant sources of animal feed
3. Differentiate hay and silage along with the crops used for their preparation.
4. What are the crop residues commonly fed to animals? Why they are important?
5. Differentiate legumes and non-legumes along with examples. Explain in detail about their cultivation methods.
6. Explain the multi-tier systems for grassland development.
7. What are perennial fodder crops? What is their importance?
8. Write about silvi pasture system?

**SECTION – B**

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

1. a) Describe silage making in detail.  
Or  
b) Explain in detail various classifications of forages.
2. a) What are the advantages of hay making? Describe hay making methods in detail.  
Or  
b) Write in detail about the factors affecting feed value and deterioration.
3. a) Describe cereal fodder in detail.  
Or  
b) How to reduce fodder wastage during cultivation, harvest, transportation, storage and feeding.
4. a) What do you understand by scarcity fodder. Explain different types of scarcity fodders in detail.  
Or  
b) Write in detail about Agro- Industry wastes and other unconventional feeds
5. a) Describe the cultivation practices of legumes.  
Or  
b) Write about manures and fertilizers used for grass fodders

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<b>4<sup>th</sup> Semester</b>	1.	Health and hygiene	Multi-disciplinary course	2+0=2
	2.	Disaster management	Skill enhancement course	2+0=2
	3.	Laboratory diagnostic techniques	Major subject	3+1=4
	4.	Livestock production and technology	Major subject	3+1=4
	5.	Infectious diseases of livestock and poultry	Major subject	3+1=4
	6.	Avian production and management	Minor subject	3+1=4
	7.	Dairy plant management	Minor subject	3+1=4
<b>Total</b>				<b>19+5=24</b>
Short term internship/Apprenticeship of 180 hrs with 4 credits. Student is eligible for Exit option-2 with the award of Diploma.				

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**2023-24 Admitted batch**  
**HEALTH AND HYGIENE**  
**Credits (2+0=2)**

**Unit I: Basics of Nutrition**

1. Nutrition – definition, importance, Good nutrition and mal nutrition; Balanced Diet: Basics of Meal Planning
2. Carbohydrates –functions, dietary sources, effects of deficiency.
3. Lipids –functions, dietary sources, effects of deficiency.
4. Proteins –functions, dietary sources, effects of deficiency.
5. Brief account of Vitamins- functions, food sources, effects of deficiency,
6. Macro and micro minerals –functions, effects of deficiency; food sources of Calcium, Potassium and Sodium; food sources of Iron, Iodine and Zinc
7. Importance of water– functions, sources, requirement and effects of deficiency.

**Unit II: Health**

8. Health - Determinants of health, Key Health Indicators, Environment health & Public health; Health-Education: Principles and Strategies
9. Health Policy & Health Organizations: Health Indicators and National Health Policy of Govt. of India-2017; Functioning of various nutrition and health organizations in India viz., NIN (National Institution of Nutrition), FNB (Food and Nutrition Board), ICMR (Indian Council of Medical Research), IDA (Indian Dietetics Association), WHO-India, UNICEF-India
10. National Health Mission: National Rural Health Mission (NRHM) Framework, National Urban Health Mission (NUHM) Framework
11. Women & Child Health Care Schemes: Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+); Janani Shishu Suraksha Karyakaram (JSSK); Rashtriya Bal Swasthya Karyakram (RBSK); India Newborn Action Plan (INAP); Adolescent Health- Rashtriya Kishor Swasthya Karyakram (RKSK)
12. Disaster Management – Containment, Control and Prevention of Epidemics and Pandemics – Acts, Guidelines and Role of Government and Public

**Unit III: Hygiene**

13. Hygiene – Definition; Personal, Community, Medical and Culinary hygiene; WASH (Water, Sanitation and Hygiene) programme
14. Rural Community Health: Village health sanitation & Nutritional committee (Roles & Responsibilities); About Accredited Social Health Activist (ASHA); Village Health Nutrition Day, Rogi Kalyan Samitis
15. Community & Personal Hygiene: Environmental Sanitation and Sanitation in Public places
16. Public Awareness through Digital Media - An Introduction to Mobile Apps of

Government of India: NHP, Swasth Bharat, No More Tension, Pradhan Mantri Surakshit Mantritva Abhiyan (PM Suman Yojana), My Hospital (Mera aspataal), India fights Dengue, JSK Helpline, Ayushman Bhava, Arogya Setu, Covid 19AP

## REFERENCES

- Bamji, M.S., K. Krishnaswamy & G.N.V. Brahmam (2009) Textbook of Human Nutrition(3rd edition) Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
- Swaminathan (1995)Food & Nutrition(Vol I, Second Edition) The Bangalore Printing &Publishing Co Ltd., , Bangalore
- Vijaya Khader (2000)Food, nutrition & health, Kalyan Publishers, New Delhi
- Srilakshmi, B., (2010)Food Science, (5th Edition) New Age International Ltd., New Delhi
- Weblinks: <https://nhm.gov.in/>
- National Rural Health Scheme:  
<https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=969&lid=49>
- National Urban Health Scheme:  
<https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=970&lid=137>
- Village health sanitation & Nutritional committee  
<https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=149&lid=225>
- About Accredited Social Health Activist (ASHA)  
<https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=150&lid=226>
- Village Health Nutrition Day  
<https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=152&lid=228>
- Rogi Kalyan Samitis  
<https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=153&lid=229>
- Health Impact Assessment –  
[https://www.who.int/hia/about/faq/en/\(suggested information only\)](https://www.who.int/hia/about/faq/en/(suggested%20information%20only))
- [http://www.euro.who.int/data/assets/pdf\\_file/0011/261929/Health-in-Impact-Assessments-final-version.pdf?ua=1](http://www.euro.who.int/data/assets/pdf_file/0011/261929/Health-in-Impact-Assessments-final-version.pdf?ua=1)
- WASH  
<https://www.unicef.org/wash/> and
- [https://www.unicef.org/wash/files/UNICEF\\_Strategy\\_for\\_WASH\\_2016\\_2030.PDF](https://www.unicef.org/wash/files/UNICEF_Strategy_for_WASH_2016_2030.PDF)
- Healthy Living <https://www.nhp.gov.in/healthylivingViewall>

Note: The above web links are from MoHFW, GoI. Teachers can prepare their notes from other resources also

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**II Year – Semester IV**  
**2023-24 Admitted batch**  
**DISASTER MANAGEMENT**  
**Credits (2+0=2)**

**UNIT-I**

Introduction of Disaster - Different types of disasters- Natural- (flood, cyclone, earthquake, famine and pandemic) - Accidental- (Fire, Blasting, Chemical leakage, Rail, Aviation, Road boat tragedies and nuclear pollution) - Disaster Management Act 2005

**UNIT-II**

Causes and immediate effects of Disasters - Preparedness of disasters –Precautions – Dissemination of information - Nature and concepts - Role of National Disaster Management Authority and Role of Government and non-governmental organizations in protecting human livestock and natural resources.-Use of technology -Role of Citizens and Youth in the prevention.

**UNIT-III**

Post disaster effects - short term - Procedures for Rehabilitation and Recovery - Role of volunteers and Safety Precautions - Long term remedial and preventive measures – Collection, filing and storage of information - Case studies

**Suggested co curriculum Activities:**

1. Invite lectures by local experts
2. Training on preparedness, post disaster services
3. Analysis of Case studies
4. Visit to a disaster management office and facility
5. Assignments, Group discussion, quiz etc.

**References:**

1. Jagbirsingh - Disaster Management Future challenges and opportunities- -K.W.Publishers
2. GOI - UNDP Disaster Management Guidelines
3. J.P.Singhal - Disaster Management - Laxmi Publications
4. [www.ndma.gov.in](http://www.ndma.gov.in)
5. Wikipedia and other websites on Disaster management

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**DISASTER MANAGEMENT**  
**Credits (2+0=2)**  
**Model Paper**

**Max marks: 50**

**Time: 1hr 30mts**

**Section – A**

**Answer any four(4) questions. Each question carries 5 marks**

**4X5=20 marks**

1. Define Disaster. How cyclone is caused? Classify cyclones.
2. What is drought? Explain the different management aspects in drought situation.
3. Explain various firefighting methods.
4. Explain the role of citizens and youth in prevention and management of disasters.
5. Write in detail about the post disaster effects of Tsunami
6. What measures are to be taken in protection of livestock during flood and cyclone?
7. Explain in brief about the Disaster management act 2005.

**Section – B**

**Answer any three(3) questions. Each question carries 10 marks**

**3X10=30 marks**

1. Write an essay on National disaster management authority (NDMA) of India.
2. What are the various natural disasters? Explain in detail about any two natural disasters.
3. What are the various measures that have to be adopted in prevention of Road and boat tragedies?
4. What are the long term remedial and preventive measures in disaster management?
5. Write an essay on earthquake.



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**II Year – Semester IV**  
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**LABORATORY DIAGNOSTIC TECHNIQUES**  
**(Credits 3+1=4)**

**UNIT - 1**

Media – preparation of culture media. Common media used for bacterial and fungal cultures. Tissue cultures and applications of tissue cultures.

**UNIT -2**

Various stains and dyes used for diagnostic work. Different staining methods.

**UNIT - 3**

Sero-diagnostic techniques used for identification of antigen/antibody.

**UNIT - 4**

Preparation of permanent slides. Collection, preservation and despatch of various materials for Laboratory examinations and forensic laboratory.

**UNIT - 5**

Examination of parasitic specimens. Examination of pathological specimens. Haematological examinations – blood sample preparation and evaluation.

**PRACTICALS**

1. Identification of glassware, and laboratory equipment.
2. Good laboratory safety practices.
3. Staining procedures for different specimens.
4. Preparation of permanent slides
5. Preparation of temporary slides
6. Preparation of museum specimens.

**Reference books:**

- Veterinary Laboratory Diagnosis - Chauhan RS
- Veterinary Laboratory Diagnosis - Sriraman
- Veterinary Technician's Handbook of Laboratory Procedures - Brianne Bellwood and Melissa Andrasik Catton, John Wiley
- Veterinary Laboratory Medicine Clinical Biochemistry and Haematology - Morag G. Kerr , John Wiley

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**LABORATORY DIAGNOSTIC TECHNIQUES**  
**(Credits 3+1=4)**  
**Model paper**

**Time: 3hrs**

**Maximum: 75marks**

**SECTION – A**

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

1. What is media and write the classification of media.
2. Write about different staining methods.
3. Write about different media for fungal cultures.
4. List out common stains used in diagnostic works.
5. Write the preparation of smears.
6. Write in detail about hematological examination.
7. Explain complement fixation test.
8. Write about collection, preservation and dispatch of materials to forensic laboratory.

**SECTION – B**

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

1. Write in detail the preparation of culture media and list out the commonly used media.

(or)

Explain in detail about tissue culture and its applications.

2. Define simple staining and differential staining and explain briefly about any 2 staining methods.

(or)

Write in detail about collection, preparation and dispatch of materials for laboratory examinations.

3. Write in detail about examination of parasitic specimens.

(or)

Explain examination of pathological specimens.

4. What are the different serodiagnostic techniques used for identification of antigen/antibody.

(or)

Explain in detail about preparation of permanent slides.

5. Write about collection and processing of specimens for clinical examination.

(or)

Explain in detail about how clinical and morbid materials are to be collected for laboratory examinations.

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**II Year – Semester IV**  
**2023-24 Admitted batch**  
**LIVESTOCK PRODUCTION TECHNOLOGY**  
**(Credits 3+1=4)**

**UNIT – 1**

Milk industry in India, Composition & Nutritive value of milk  
Factors effecting composition of milk Physio-chemical properties of milk. Processing of milk.  
Packaging, transportation, storage and distribution of milk and milk products. Organic milk products.

**UNIT – 2**

Introduction to functional milk products. Preparation of cream, butter, paneer or channa, ghee, khoa, lassi, dahi, ice-cream, mozzarella cheese and dairy byproducts.  
Common defects of milk products and their remedial measures.

**UNIT - 3**

Prospect of meat industry in India. Nutritive value of meat. Conversion of muscle to meat.  
Preservation of meat and poultry; drying, salting, curing, smoking, chilling, freezing, canning, irradiation and chemicals. Ageing of meat.

**UNIT - 4**

Modern processing technologies of meat and meat products. Packaging of meat and meat products.  
Formulation and development of meat; kabab, sausages, meat balls or patties, tandoori chicken, soup, pickles

**UNIT - 5**

Layout and management of rural, urban and modern abattoirs. Animal welfare and pre-slaughter care, handling and transport of meat animals including poultry. Procedures of Ante-mortem and post mortem examination of meat animals. Slaughtering and dressing of meat animals and birds.  
Evaluation, grading and fabrication of dressed carcasses

**PRACTICALS**

1. Visit to modern milk processing and milk products manufacturing plants.
2. Visit to slaughter houses or meat plants.
3. Sampling of milk. estimation of fat, solid not fat (SNF) and total solids.
4. Platform tests.
5. Detection of adulteration of milk. Determination of efficiency of pasteurization.
6. Estimation of deteriorative changes in meat and meat products.
7. Methods of ritual and humane slaughter, flaying and dressing of food animals including poultry.
8. Determination of meat yield, dressing percentage, meat bone ratio and cut up parts

**Reference books:**

- Text Book on Milk & Milk Products - Ranveer R C, Kamble, D K, Patange
- Milk and Milk Products - H. Varnam Alan
- Principle of Dairy Processing - Warner James N
- Outline of Dairy Technology - Sukumar De
- Modern Abattoir Practices & Animal Byproducts Technology – B.D.Sharma

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**LIVESTOCK PRODUCTION TECHNOLOGY**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any FIVE questions. Each question carries equal marks.

(5\*5 =25)

1. Write about organic milk and milk products
2. What is Standardization of milk write in detail.
3. Write about common defects of butter and their remedial measures.
4. Write in detail about nutritive value of meat.
5. Explain ageing of meat.
6. Write about evaluation and grading of carcass.
7. Explain salting, curing, freezing, canning.
8. Write about composition of milk

**SECTION – B**

Answer all questions. Each question carries TEN marks

(5\*10 =50)

1. Write in detail about scope of Milk industry in India.  
(or)

Write about packaging, transport, storage and milk and milk products.

2. Write down the procedure of preparation of milk products like ghee, paneer or channa, khoa, ice cream.  
(or)

Write in detail about platform tests.

3. Write in detail about preservation of meat & poultry.  
(or)

What is the procedure of Ante-mortem examination of meat animals. Write in detail.

4. What is Pasteurization of milk write in detail.  
(or)

Write about packaging, transport, storage and milk and milk products.

5. Write in detail procedure of Post-mortem examination of meat animals.  
(or)

Write about layout and management of rural, urban and modern abattoirs.

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**II Year – Semester IV**  
**2023-24 Admitted batch**  
**INFECTIOUS DISEASES OF LIVESTOCK AND POULTRY**  
**(Credits 3+1=4)**

**UNIT - 1**

Etiology, symptoms, diagnosis and treatment of various Viral diseases of livestock, pets and poultry (Rinderpest, Foot & mouth, Infectious bovine Rhinotracheitis, Rabies, Blue tongue, Sheep and Goat pox, Peste des petes ruminants, Canine Distemper, Infectious Canine hepatitis, Canine parvo virus Avian influenza, Marek's disease, Infectious bronchitis and Ranikhet disease)

**UNIT - 2**

Etiology, symptoms, diagnosis and treatment of various Bacterial diseases of livestock, pets and poultry (Tuberculosis, Anthrax, Brucellosis, Haemorrhagic septicaemia (HS), Blackquarter (BQ), Leptospirosis, Salmonellosis Enterotoxaemia in sheep, Actinobacillosis and Actinomycosis)

**UNIT - 3**

Etiology, symptoms, diagnosis and treatment of various Parasitic diseases of livestock, pets and poultry (Amphistomiasis, Fasciolasis, Babesiosis, Theileriosis, Trypanosomiasis, Ascariasis, Coccidiosis in poultry, Canine heartworm disease Leishmaniasis and Tapeworm infestation)

**UNIT – 4**

Etiology, symptoms, diagnosis and treatment of various Fungal diseases of livestock, pets and poultry (Dermatophytosis, Candidiasis, Aflatoxicosis)

**UNIT – 5**

Etiology, symptoms, diagnosis and treatment of various Diseases caused by ectoparasites of livestock, pets and poultry (Diseases caused by Ticks, Mites, Lice, Fleas and Flies. Vector borne diseases of dogs). control infectious disease Outbreak systematically at field level.

**PRACTICALS**

1. Post mortem examination of different diseases and their interpretation.
2. Study of gross specimens of various organs pertaining to infectious and non- infectious diseases of domestic animals.
3. Study of various viral, bacterial, parasitic and fungal diseases of livestock, pets and poultry

**Books for reference**

1. Text book of preventive veterinary medicine - Dr.Amalenduchakarvarthi
2. Infectious diseases of livestock - S.V. Pundit and V.V.Deshmukh
3. A Textbook Of Veterinary Special Pathology Infectious Diseases Of Livestock And Poultry 2005  
Edition by Vegad JL, IBDC Publishers
4. Advanced Pathology And Treatment Of Diseases Of Poultry-C D N Singh,
5. Poultry Diseases A Guide for Farmers and Poultry Professionals -Vegad J.

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**INFECTIOUS DISEASES OF LIVESTOCK AND POULTRY**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

Answer any **FIVE** questions. Each question carries equal marks.

(5\*5 =25)

1. Describe Etiology, Transmission, Symptoms and control of Foot and Mouth Disease.
2. Describe Etiology, Transmission, Symptoms and control of Bluetongue in sheep.
3. Write note on Ascariosis in calves.
4. Describe in detail about Trypanosomiasis (Surra) in large ruminants..
5. Enlist common Endoparasitic diseases of bovine and small ruminants
6. Write deworming schedule and prophylactic vaccinations calendar in large ruminants.
7. Write about symptoms of rabies in cattle and control.
8. List out common Viral, Bacterial and Protozoan diseases of cattle and buffalo.

**SECTION – B**

Answer **all** questions. Each question carries **TEN** marks

(5\*10 =50)

1. Write a detailed note on Haemorrhagic septicaemia in buffaloes.  
(or)

Narrate Brucellosis in cattle.

2. Write in detail about Theileriosis in cross breed cattle including prophylaxis  
(or)

Write in detail about Babesiosis cattle including.

3. Explain Etiology, Symptoms, lesions, and control of Enterotoxaemia (ET) in sheep  
(or)

Explain Etiology, Symptoms, lesions, and control of PPR in sheep & Goat.

4. Give classification of Antibiotics used in veterinary medicine.  
(or)

Enlist common Deworming drugs and Ectoparasiticide used in veterinary medicine.

5. Narrate Etiology, Symptoms, post-mortem lesions and control of Ranikhet disease (ND) in poultry.  
(or)

Explain how to control infectious disease Outbreak systematically at field level.

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**II Year – Semester IV**  
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**AVIAN PRODUCTION AND MANAGEMENT**  
**(Credits 3+1=4)**

**UNIT – 1**

Scavenging system of management. Brooding management

**UNIT – 2**

Care and management of Layers. Care and management of Broilers

**UNIT -3**

Feeding management, Classification of Nutrients- Nutrient requirement and feeding systems, Additive and supplements.

**UNIT – 4**

Egg formation, Egg structure – Physical and Chemical composition., Incubation of eggs

**UNIT – 5**

Marketing of poultry and poultry products, General principles of poultry medication, Common diseases of poultry

**PRACTICALS**

1. Common breeds of poultry, different classes, Indian chickens and other avian species breeds.
2. Digestive and respiratory system of chicken.
3. Male and female reproductive system–
4. Economic traits of broilers, Layers and breeders.
5. Housing and design of a poultry farm.
6. Poultry farm equipment and their classification.
7. Brooding arrangement in broiler farms.
8. Management during summer, winter and Rainy season

**Reference books:**

- Manual on Avian Production and Management - Ghosh Nilotpal, IBDC
- Practical manual of avian production and management - Jadhav
- Handbook of Poultry Production and Management - M F Siddique
- Livestock Production Management - N S R sastry, C K Thomas
- Livestock Production - Javed k, intech



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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**II Year – Semester IV**  
**2023-24 Admitted batch**  
**AVIAN PRODUCTION AND MANAGEMENT**  
**(Credits 3+1=4)**  
**Model paper**

Answer any **FIVE** questions. Each question carries Five marks.

(5\*5 =25)

1. Describe the digestive system of chicken with diagram.
2. Indian poultry industry – give an over view.
3. Describe the brooding arrangements in farm.
4. Explain the principles of disease prevention and management.
5. Give the layout of a poultry shed. Explain the influence of environmental factors in poultry housing.
6. Give the outlines of poultry classification.
7. Describe the female reproductive system of poultry
8. Explain deep litter system.

**SECTION – B**

Answer All the questions. Each question carries Ten marks

(5\*10 =50)

1. A) Write in detail the incubation of eggs in poultry farm.  
(or)  
B) Principles of management of poultry during Summer, winter and rainy seasons.
2. A) Describe the structure of egg. Explain its physical and chemical composition.  
(or)  
B) explain marketing of poultry and poultry products.
3. A) Enlist common diseases of poultry. Write in detail the cause, source, symptoms and treatment of any 5 diseases.  
(or)  
B) Explain management of deep litter. How to control litter born diseases.
4. A) What are the nutrient requirements of layers and broilers. Describe various feeding systems.  
(or)  
B) What is cage system. What are the advantages and disadvantages of cage system.
5. A) Explain in detail the vaccination schedule of layer birds.  
(or)  
B) Explain in detail the formation of egg.

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**II Year – Semester IV**  
**2023-24 Admitted batch**  
**DAIRY PLANT MANAGEMENT**  
**(Credits 3+1=4)**

**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:**

1. Visit to milk collection center Visit to milk chilling center.
2. Visit to various units of dairy plant.
3. Hands on training in preparation of various milk products.
4. Handling of different dairy equipment

**REFERENCE BOOKS:**

- Ahmad Tufail. (1990). Dairy Plant Systems Engineering. Kitab Mahal Publisher, Allahabad.
- Anantakrishnan. C.P. and Simha N.N. (1987). Dairy Engineering Technology and Engineering of Dairy Plant operation

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**Dairying & Animal husbandary - Honours**  
**II Year – Semester IV**  
**2023-24 Admitted batch**  
**DAIRY PLANT MANAGEMENT**  
**(Credits 3+1=4)**  
**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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<b>5<sup>th</sup> Semester</b>	1.	Fundamentals of Veterinary medicine	Major subject	3+1=4
	2.	Basics of Veterinary surgery	Major subject	3+1=4
	3.	Veterinary Gynaecology, Obstetrics and AI	Major subject	3+1=4
	4.	Veterinary Pharmacology	Major subject	3+1=4
	5.	Veterinary clinical practice	Minor subject	3+1=4
	6.	Animal welfare ethics and jurisprudence	Minor subject	3+1=4
	7.	Environmental education		2+0=2
<b>Total</b>				<b>20+6=26</b>

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**Dairying & Animal husbandary - Honours**  
**III Year – Semester V**  
**2023-24 Admitted batch**  
**FUNDAMENTALS OF VETERINARY MEDICINE**  
**(Credits 3+1=4)**

**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, shock, allergy, oedema, coma.

**UNIT – 3**

Etiology, clinical manifestations, diagnosis, treatment of diseases of digestive system, respiratory system, cardiovascular system and urinary system

**UNIT – 4**

Etiology, clinical manifestations, diagnosis, treatment of diseases of nervous, musculoskeletal, haemopoietic system and skin.

**UNIT – 5**

Deficiency 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**

1. Blood transfusion
2. Deficiency diseases caused by macro elements
3. Deficiency diseases caused by micro elements
4. Important systemic diseases

**References:**

Textbook of Clinical Veterinary Medicine - Amalendu Chakrabarti

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**Dairying & Animal husbandary - Honours**  
**III Year – Semester V**  
**2023-24 Admitted batch**  
**FUNDAMENTALS OF VETERINARY MEDICINE**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Write a note on scope of veterinary medicine
2. Write about concept of prognosis
3. Write in detail about dermatitis
4. Write in detail about osteomalacia
5. Explain urinary incontinence
6. Write in detail about hypovitaminosis A caused due to deficiency of vitamin A.
7. Write in detail about congestive heart failure.
8. Write in detail about hematuria.

**SECTION – B**

Answer All the questions. Each question carries TEN marks

(5\*10 =50)

1. A) Write a detail concept of differential diagnosis.  
(or)  
B) Write a detailed about hypothermia and its management
2. A) Write in detail about classification and management of shock.  
(or)  
B) Explain coma in detail.
3. A) Write about simple indigestion its clinical findings and treatment.  
(or)  
B) Write in detail about aspiration pneumonia.
4. A) Write in detail about pericarditis.  
(or)  
B) Write in detail about acute renal failure.
5. A) What is anemia? What are different types of anemia? Write in detail about its etiology, symptoms and treatment.  
(or)  
B) List out deficiency diseases caused by macro minerals and explain in detail about any two deficiency diseases.

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**III Year – Semester V**  
**2023-24 Admitted batch**  
**BASICS OF VETERINARY SURGERY**  
**(Credits 3+1=4)**

**UNIT - 1**

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

**UNIT - 2**

History taking, physical examination. 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. Haemorrhage and hemostasis.

Fractures.

Major surgeries of cattle and dogs.

**PRACTICALS**

1. Introduction of common surgical equipment and instruments.
2. Suture materials, surgical knots and suture patterns.
3. Preparation of surgical patients.
4. Other operation theatre routines like sterilization, preparation of theatre, Surgeon and surgical pack.
5. 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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**Dairying & Animal husbandary - Honours**  
**III Year – Semester V**  
**2023-24 Admitted batch**  
**BASICS OF VETERINARY SURGERY**  
**(Credits 3+1=4)**  
**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. Explain various types of surgeries in animal practice.

**SECTION – B**

Answer All the questions. Each question carries TEN marks

(5\*10 = 50)

- 1.a. Non absorbable synthetic suture materials  
(or)  
b. Explain the four phases of wound healing.
2. a. Different methods of haemostasis  
(or)  
b. Write in detail about fractures and also classify them.
- 3.a Treatment for Burns  
(or)  
b. List out various surgical instruments and their uses.
- 4.a Write down various surgical affections of pelvic cavity of dog  
(or)  
b. What is hernia? Explain the procedure for operation of 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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**III Year – Semester V**  
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**VETERINARY GYNAECOLOGY, OBSTETRICS AND AI**  
**(Credits 3+1=4)**

**UNIT -1**

Oestrous cycle and factors affecting the length of the oestrous cycle, problems in oestrus detection and oestrus detection aids.

**UNIT -2**

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

**UNIT -3**

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

**UNIT -4**

Forms of female and male infertility in bovines.

**UNIT -5**

Care and management of pregnant animals. Stages of parturition.  
Artificial insemination techniques in farm and pet animals

**PRACTICALS**

1. Rectal palpation technique for bovine reproductive organs
2. Study of male genital organs using slaughter house specimens Oestrus detection in farm animals
3. Obstetrical equipment and instruments
4. Vasectomy
5. Castration
6. Handling and maintenance of LN2 containers

**Reference books:**

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

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**VETERINARY GYNAECOLOGY, OBSTETRICS AND AI**  
**(Credits 3+1=4)**  
**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 pathological affections of ovary in cow?
6. Draw the diagram of buffaloe's female reproductive tract.
7. Discuss about procedure of artificial insemination in cattle.
8. Enumerate gestational periods in different species and define the term Gestation

**SECTION – B**

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

1. A) Write in detail about factors effecting gestation lenth.  
(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 stages of parturition 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) Discuss in detail about the estrous cycle in bitches.
5. A) Discuss in detail about pathological affections of uterus?  
(or)  
B) Draw diagrams of different cells exposed during vaginal cytology in bitches.

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**III Year – Semester V**  
**2023-24 Admitted batch**  
**VETERINARY PHARMACOLOGY**  
**(Credits 3+1=4)**

**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**

1. Handling and washing of laboratory wares.
2. Handling and operation of commonly used laboratory instruments. Concept of good laboratory practices (GLP).
3. Pharmacy appliances. Principles of compounding and dispensing. Metrology, systems of weights and measures, pharmacy calculations. Pharmaceutical processes. Pharmaceutical dosage forms.
4. Prescription writing, incompatibilities.

**Reference books:**

- Veterinary Pharmacology - Vallachira Aravindan
- Essentials Of Veterinary Pharmacology And Therapeutics - H S Sandhu

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**VETERINARY PHARMACOLOGY**  
**(Credits 3+1=4)**  
**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 note 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.

**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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**VETERINARY CLINICAL PRACTICE**  
**(Credits 3+1=4)**

**UNIT -1**

Case history, Dehydration, Fluid therapy

**UNIT -2**

Acid indigestion, Alkaline indigestion, Impaction, Bloat, Bovine ketosis, Mastitis, Milk fever, White scours, Poisoning

**UNIT - 3**

Repeat breeding, Pyometra, Dystocia, Prolapse, Retention of placental membranes

**UNIT -4**

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

**UNIT -5**

Preparation of animal for surgery, Post-surgical management

**PRACTICALS**

1. Sterilization
2. Concept of Diagnosis
3. Concept of Differential diagnosis
4. 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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**2023-24 Admitted batch**  
**VETERINARY CLINICAL PRACTICE**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Write short note on retention of placental membranes.
2. Write in detail about bloat.
3. Write about case history.
4. Write about poisoning in animals.
5. Discuss in detail about abscess.
6. Write about preparation of animal for surgery.
7. Discuss post surgical management.
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 medial patellar desmotomy

2. Write about mastitis, causes, clinical symptoms, diagnosis, treatment and prevention?

(or)

Write about acid digestion, causes, clinical symptoms, diagnosis, treatment?

3. Write about repeat breeding, causes, clinical symptoms, diagnosis, treatment?

(or)

Write about pyometra, causes, clinical symptoms, diagnosis, treatment

4. Write about milk fever, causes, clinical symptoms, diagnosis, treatment

(or)

Write about horn amputation in large animals

5. Write about prolapse, causes, clinical symptoms, diagnosis, treatment

(or)

Write in detail about wound.

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**III Year – Semester V**  
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**ANIMAL WELFARE - ETHICS AND JURISPRUDENCE**  
**(Credits 3+1=4)**

**UNIT – 1**

Introduction -What is Animal Welfare - Why Should We Be Concerned About Animal Welfare -Ethical / Moral Concerns about the Lives of Animals - Human Health and Animal Products Quality Concerns - Environmental and Biodiversity Concerns - Trading and Marketing of Animal Products Concerns - Individual Concerns for Animal Welfare - Organisational Concern for Animal Welfare -Different views of animal welfare – Animal rights – Animal cruelty.

**UNIT – 2**

Animal Ethics and Sentience - different types of ethics, ethical views of animals, ethical decision making, animal sentience and scientific evidence for animal sentience. Animal Welfare Ethical on consequentialism, contractarian utilitarian and respect for nature ethical approaches with case studies and ethical dilemmas for animal welfare. Animal Welfare Ethical Theories-2 describes the deontological, animal rights and virtue ethics ethical approaches with case studies and practical ethical decision-making. Role of Veterinarians in Animal Welfare - professional code of conduct and professional ethics, veterinarian oath, welfare obligations and principles, attributes of veterinarians in animal welfare, and explicit roles of veterinarians in animal welfare

**UNIT – 3**

Animal Welfare Laws - An Overview on the animal welfare legislation and policy commitment in India as per Constitution of India and Indian penal code, terms used in law and violations and how to help stray animals. Prevention of Cruelty to Animals Act, 1960, the background history behind the PCA Act, functions of AWBI, salient features of PCA Act

**UNIT – 4**

Legal Procedures in Animal Welfare - the common offenses against animals, how and whom to report the cruelty to the animals, role of police and filing the FIR. Veterinary Jurisprudence – An Overview the concept of veterinary jurisprudence, functions and structure of courts, important sections of IPC, vetero-legal aspects and post-mortem examination of vetero legal cases. Animal Welfare Laws and Enforcement Agencies meaning and role of enforcement agencies, sections for drawing of FIR/NCR, cruelty to animals in general.

## **UNIT – 5**

Illegal use of animals for performance, powers of the police, offences against captive elephants, procedure for reporting, other common offences against animals and procedure for seizure and maintenance of seized animals. Enforcement of Animal Welfare Laws – Overloading, Transportation and Slaughter deals with the relevant sections of IPC and role of law enforcement agencies in implementing animal welfare laws related to overloading, meat shops, slaughterhouses, and transport of animals.

### **PRACTICALS:**

1. Visit to animal rescue centre.
2. Visit to animal birth control programme unit.
3. Guest lecture with police officer involved in confiscation of vehicles carrying out illegal transportation of animals.
4. Interaction with animal welfare activists.
5. Visit to Blue cross unit.
6. Visit to nearest SPCA (Society for prevention of cruelty to animals).

### **REFERENCE BOOKS:**

- Study material of Post graduate diploma on animal welfare (PGDAW) – IGNOU
- Animal welfare ethics and Jurisprudence – Kirti Dua
- A practical approach to animal welfare laws – Noel Sweeney
- Veterinary Jurisprudence and post mortem – Ranum Dabas



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**ANIMAL WELFARE - ETHICS AND JURISPRUDENCE**  
**(Credits 3+1=4)**  
**Model Paper**

Time: 3hrs

Maximum: 75marks

**Section – A**

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

1. Enlist common causes of sudden death in livestock.
2. Types of evidence.
3. Explain about common offences against the animals.
4. Write a note on Frauds in the sale of livestock.
5. Write a note on Frauds in the sale of meat.
6. Mention the common animal welfare organizations in India
7. Write note on Bestiality
8. Types of witness.

**Section – B**

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

1. Write a detailed note on role of Animal Welfare Organizations.  
(or)  
Discuss about Common malpractices in livestock insurance claims.
2. Write in detail about procedure and guidelines of conducting post - mortem examination in vetero legal cases.  
(or)  
Write about various types of wounds in animals.
3. Role of Veterinarian in Animal Welfare.  
(or)  
Duties of Veterinarians to their Clients and Patients.
4. Discuss about Common offences against animals and laws related to these offences.  
(or)  
Write about procedure for livestock insurance claim.
5. Discuss about Frauds in the sale of milk.  
(Or)  
Discuss in detail about PCA Act.

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**ENVIRONMENTAL EDUCATION**  
**(Credits 2+0=2)**

**Unit 1: Environment and Natural Resources**

1. Multidisciplinary nature of environmental education; scope and importance.
2. Man as an integral product and part of the Nature.
3. A brief account of land, forest and water resources in India and their importance.
4. Biodiversity: Definition; importance of Biodiversity - ecological, consumptive, productive, social, ethical and moral, aesthetic, and option value.
5. Levels of Biodiversity: genetic, species and ecosystem diversity.

**Unit-2: Environmental degradation and impacts**

1. Human population growth and its impacts on environment; land use change, land degradation, soil erosion and desertification.
2. Use and over-exploitation of surface and ground water, construction of dams, floods, conflicts over water (within India).
3. Deforestation: Causes and effects due to expansion of agriculture, firewood, mining, forest fires and building of new habitats.
4. Non-renewable energy resources, their utilization and influences.
5. A brief account of air, water, soil and noise pollutions; Biological, industrial and solid wastes in urban areas. Human health and economic risks.
6. Green house effect - global warming; ocean acidification, ozone layer depletion, acid rains and impacts on human communities and agriculture.
7. Threats to biodiversity: Natural calamities, habitat destruction and fragmentation, over exploitation, hunting and poaching, introduction of exotic species, pollution, predator and pest control.

**Unit 3: Conservation of Environment**

1. Concept of sustainability and sustainable development with judicious use of land, water and forest resources; afforestation.
  2. Control measures for various types of pollution; use of renewable and alternate sources of energy.
  3. Solid waste management: Control measures of urban and industrial waste.
  4. Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity.
  5. Environment Laws: Environment Protection Act; Act; Wildlife Protection Act; Forest Conservation Act.
  6. International agreements: Montreal and Kyoto protocols; Environmental movements: Bishnois of Rajasthan, Chipko, Silent valley.
- Suggested activities to learner: 1. Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc
2. Visit to a local polluted site-Urban/Rural/Industrial/Agricultural site.
  3. Study of common plants, insects, birds and basic principles of identification.
  4. Study of simple ecosystems-forest, tank, pond, lake,mangroves etc.
  5. Case study of a Forest ecosystem or a pond ecosystem.

**Suggested text book:**

- ErachBarucha (2004) Text book of Environmental Studies for Undergraduate courses (Prepared for University Grants Commmission) Universities Press.
- PurnimaSmarath (2018) Environmental studies Kalyani Publishers, Ludhiana

**Reference books :**

- Odum, E.P., Odum, H.T. & Andrews, J. (1971) Fundamentals of Ecology. Philadelphia:Saunders.
- Pepper, I.L., Gerba, C.P. &Brusseau, M.L. (2011). Environmental and Pollution Science.Academic Press.
- Raven, P.H., Hassenzahl, D.M. & Berg, L.R. (2012) Environment. 8th edition. JohnWiley & Sons.
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- Sengupta, R. (2003) Ecology and economics: An approach to sustainable development.OUP.
- Wilson, E. O. (2006) The Creation: An appeal to save life on earth. New York: Norton.
- Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll (2006) Principles ofConservation Biology. Sunderland: Sinauer Associates

**ANDHRA UNIVERSITY**  
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**Dairying & Animal husbandary - Honours**  
**III Year – Semester VI**  
**2023-24 Admitted batch**

**6<sup>th</sup> Semester**  
**Long term semester internship/Apprenticeship with 12 credits.**

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**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**

<b>7<sup>th</sup> Semester</b>	1.	General pathology	Major subject	3+1=4
	2.	Veterinary general bacteriology	Major subject	3+1=4
	3.	Veterinary general parasitology and helminthology	Major subject	3+1=4
	4.	Andrology and Artificial insemination	Skill enhancement course	3+1=4
	5.	Poultry farming	Skill enhancement course	3+1=4
	6.		Open online transdisciplinary course	2+0=2
	7.		Indian knowledge system-Audit course	-
<b>Total</b>				<b>17+5=22</b>

**ANDHRA UNIVERSITY**  
**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**GENERAL PATHOLOGY**  
**(Credits 3+1=4)**

**UNIT – 1**

Introduction to pathology, Etiology - Major intrinsic and extrinsic causes of disease, mode of transmission, mechanism of defence.

**UNIT – 2**

Cell in health and disease – degenerations, necrosis, gangrene, rigor mortis  
Disturbances in growth (Aplasia, hypoplasia, atrophy, hypertrophy, hyperplasia, metaplasia and dysplasia).

**UNIT – 3**

Inflammation: Definitions, classification, various cell types and their functions, mediators, cardinal signs and systemic effects.  
Healing – healing of wound – factors affecting wound healing, healing of special tissues.  
Fever – its causes and pathogenesis of fever

**UNIT – 4**

Circulatory disturbances – hyperemia / congestion, haemorrhage, infarction, oedema and burns

**UNIT – 5**

Neoplasms -Definitions, general characteristics and classification of neoplasms. Differences between benign and malignant tumours. various types of tumours in domestic animals.

**PRACTICALS:**

- Growth disturbances
- Haemorrhage
- Neoplasms
- Post mortem examination of different species of animals.
- writing of post mortem report.

**REFERENCE BOOKS:**

- Veterinary Pathology 6th Ed. (2003) - Ganti Sastri and Rama Pao.
- Textbook of Veterinary General Pathology 2nd Ed. - J. L. Vegad

**ANDHRA UNIVERSITY**  
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**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**GENERAL PATHOLOGY**  
**(Credits 3+1=4)**  
**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 transmission of etiological agents?
2. write about classification of inflammation?
3. what are different types of necrosis?
4. what are various factors affecting wound healing?
5. write a note on infarction?
6. write about different epithelial tumors?
7. write a short note on burns?
8. Distinguish between malignant and benign tumors?

**SECTION – B**

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

1. A) Explain defense mechanism by which animals are able to protect themselves from infection / disease.

(or)

B) Define inflammation? Write in detail about inflammation.

2. A) Explain healing in detail

(or)

B) Define fever? Write in detail pathogenesis of fever?

3. A) Explain in detail about haemorrhage?

(or)

B) Define oedema and explain in detail.

4. A) Explain in detail about Neoplasms

(or)

B) what is Embolism? What are various sources and varieties of emboli?

5. A) Explain in detail Rigormortis?

(or)

B) Write in detail about Atropy?

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**Dairying & Animal husbandry - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**GENERAL VETERINARY BACTERIOLOGY**  
**(Credits 3+1=3)**

**UNIT – 1**

History of Microbiology – Introduction, Theories of Microbiology, History of developments and Divisions of Microbiology.

**UNIT – 2**

Classification of organisms, Morphology of bacteria – bacterial cell structure, structure of cell wall, structures external to cell wall, structures internal to cell wall

Cell wall – introduction, structure and chemical composition, structure of gram positive and gram negative bacteria.

**UNIT – 3**

Nutritional requirements of bacteria, Bacterial growth and cultivation – Reproduction and growth, growth curve. Distribution of bacteria – source of infection, transmission, portals of entry. Microorganisms and hosts, Toxins – characteristics.

**UNIT – 4**

Bacterial Genetics – Bacterial mutations, Methods of gene transfer, and plasmids.

**UNIT – 5**

Classification and Nomenclature of Bacteria – Methods used for classification, Nomenclature.

**PRACTICALS**

1. Developments in microbiology
2. Structure of Bacterial cell wall
3. Growth Curve
4. Media and different types of media
5. Media used for bacterial cultures

**References:**

Essentials of Veterinary Bacteriology and Mycology - G. R. Carter, Darla J. Wise  
Veterinary Microbiology – B.K. Markey  
Text book of veterinary Microbiology – Prof. S N Sharma and Dr. S C Adlakha



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**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**GENERAL VETERINARY BACTERIOLOGY**  
**(Credits 3+1=3)**  
**Model paper**

Time: 3hrs

Maximum: 75 marks

**SECTION–A**

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

1. Write a short note on Plasmids
2. What are Mutagens?
3. Write differences between Exotoxins and Endotoxins?
4. What are cultural characteristics of Bacteria?
5. Write in detail about nutritional requirements of bacteria?
6. Explain structure of endospore with labelled diagram?
7. Distinguish between structure of cell wall of gram positive and gram negative bacteria?
8. Explain cell wall, its structure and chemical composition?

**SECTION–B**

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

1. A) Draw a neat diagram of bacterial cell structure and explain morphology based on shape?

(or)

- B) Explain Theories of Microbiology in detail

2. A) Write in detail about structures internal to cell wall?

(or)

- B) Write in detail about structures external to cell wall?

3. A) what are various methods used in classification of bacteria and write in detail classification of bacteria

(or)

- B) Explain Bacterial Recombination.

4. A) Define the term Mutation? write in detail about Mutations.

(or)

- B) What are different portals of entry? Explain source of infection and transmission.

5. A) Explain in detail Measurement of Bacterial Growth.

(or)

- B) Explain Bacterial growth curve with the help of diagram.

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**VETERINARY GENERAL PARASITOLOGY AND HELMINTHOLOGY**  
**(Credits 3+1=4)**

**UNIT – 1**

Introduction to parasitology, history of parasitology, animal associations – commensalism, mutualism, phoresis, predation and parasitism, nomenclature of parasites, standardized nomenclature of animal parasitic disease (SNOAPAD), definitions of various types of parasites (endoparasite, ectoparasite, mesoparasite, obligatory and facultative parasite, accidental parasite, temporary and permanent parasite, aberrant parasite, zoonotic parasite, histozoic parasite, coelozoic parasite, monoecious parasite, dioecious parasite, oviparous parasite, viviparous parasite, ovo-viviparous parasite), parasitic zoonoses – based on reservoir host, life-cycle.

**UNIT – 2**

Types of host (type host, definitive host, Intermediate host, paratenic host, vector, carrier host, reservoir host), types of life cycle (simple, complex, direct, indirect), prepatent period, patent period, general characteristics of parasites with characteristics of various phylum, various natural modes of infection of different types of parasites in definitive host. Biotic potential of parasites, harmful effects of parasites on their hosts. General principles of prevention and control of parasitic diseases. Anti-parasitic drugs.

**UNIT – 3**

Introduction to veterinary helminthology, Life cycle, pathogenesis, diagnosis treatment and control of trematodes – *Dicrocoelium dendriticum*, *Fasciola hepatica* and *Fasciola gigantica*, *Paramphistomum cervi*, *Schistosoma indicum* and *Schistosoma nasalis*.

**UNIT – 4**

Life cycle, pathogenesis, diagnosis treatment and control of cestodes – *Taenia saginata* and *Taenia solium*, *Moniezia expansa* and *Moniezia benedeni*, *Davainea proglottina*, *Dipylidium caninum*.

**UNIT - 5**

Life cycle, pathogenesis, diagnosis treatment and control of nematodes – *Ascaris suum*, *Toxocara canis*, Visceral larval migrans (VLM), *Ascaridia galli*, *Oesophagostomum venulosum*, *Ancylostomum caninum*, *Haemonchus contortus*, *Dirofilaria immitis*

**PRACTICALS:**

- Faecal examination techniques, egg counts, examination of faecal samples for the trematode, cestode, nematode eggs and protozoan cysts or oocysts or trophozoites.
- Methods of collection, fixation, preservation, staining and mounting of various types of parasites.

- Methods of calculation of median lethal dose (LD50) or maximum tolerated dose (MTD).
- Examination of urine samples and nasal washings for parasitic findings.
- Demonstration of gross and microscopic lesions of parasites.

**References:**

- Helminths, Arthropods and Protozoa of Domesticated Animals - E.J.L. Soulsby.
- Veterinary Parasitology - G.M. Urquhart et. al.
- A Text Book of Veterinary Parasitology - B.B. Bhatia, K.M.L. Pathak. & D.P.Banerjee

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**VETERINARY GENERAL PARASITOLOGY AND HELMINTHOLOGY**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Explain different types of host.
2. Differentiate trematodes and cestodes
3. Explain different types of metacestodes/ bladder worm
4. Nasal schistosomosis
5. Write a note on measly pork and measly beef.
6. Explain briefly about pimply gut.
7. Explain in detail the pathogenesis and clinical signs of *Dipylidium caninum*.
8. Write a short note on Visceral Larval Migrants.

**SECTION – B**

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

1. A) Explain in detail various types of animal association.  
(or)  
B) Explain in detail different modes of infection of different types of parasites.
2. A) Explain various harmful effects of parasites on their host.  
(or)  
B) What are the general principles of prevention and control of parasitic diseases.
3. A) Write the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of *Fasciola hepatica*.  
(or)  
B) Explain in detail about immature paramphistomosis in domestic ruminants
4. A) Describe in detail about the Tapeworm infection in ruminants.  
(or)  
B) Write the lifecycle, clinical signs, diagnosis, treatment and control of *Toxocara canis*.
5. A) Explain Write the lifecycle, clinical signs, diagnosis, treatment and control of *Haemonchus contortus*.  
(or)  
B) Write in detail about hookworm infection in Canines.

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**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**ANDROLOGY AND ARTIFICIAL INSEMINATION**  
**(Credits 3+1=4)**

**UNIT – 1**

Study of male reproductive system, puberty, factors affecting puberty, endocrinology of male reproduction, sexual behavior in male animals, infertility in male animals – impotentia coeundi (diseases of penis and prepuce), Impotentia generendi associated with normal and abnormal semen production. Sexual behaviour of male animals.

**UNIT - 2**

Introduction to artificial insemination, history of AI, advantages and disadvantages of AI, techniques for collection of semen in bulls, stallion, rams, bucks, boars and dogs, factors affecting semen production. AI techniques.

**UNIT - 3**

Semen evaluation – introduction, precautions to be taken, different tests, macroscopic evaluation of semen for volume, colour, viscosity, density, presence of foreign materials and gross motility. Microscopic evaluation of semen for mass activity, individual motility, sperm concentration, live and dead sperms, sperm abnormality, acrosome integrity. Biochemical evaluation of semen for hydrogen ion concentration, fructolysis index, resazurin test, alkaline and acidic phosphotase test, millovanov's resistance test.

Resistance to environmental tests – high temperature viability, cold shock resistance test, resistance to sodium chloride.

**UNIT - 4**

Extension of semen, preservation of semen at ambient and refrigeration temperatures, semen dilution, deep freezing of semen, AI techniques using chilled and and frozen semen, storage and transport of semen.

**UNIT - 5**

Planning and organisation of semen collection and artificial insemination center, selection, care, training, management of bulls. Record keeping for andrology and AI, cleaning and sterilization of AL equipment and their uptake

**Practical:**

1. Visit to Semen bank
2. Microscopic tests for evaluation of semen
3. Macroscopic tests for evaluation of semen
4. Biochemical tests for evaluation of semen
5. Preparation of semen straw
6. Preparation of extenders
7. AI technique

**References:**

Veterinary Andrology And Artificial Insemination (Pb 2019) - Saxena M. S.

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**2023-24 Admitted batch**  
**ANDROLOGY AND ARTIFICIAL INSEMINATION**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Write a short note on thermoregulation of testes.
2. Explain about accessory glands of dog.
3. Explain in detail about diseases of penis and prepuce
4. Write a short note on storage of semen.
5. Write in detail about thawing of semen straw.
6. Explain about cleaning of AI equipment
7. Explain about the deep freezing of semen straws
8. Write about diluents used for preservation of semen at refrigeration temperature.

**SECTION – B**

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

1. A) Explain the factors affecting puberty in male animals.  
(or)  
B) Explain in detail about various components of copulatory patterns in male domestic animals.
2. A) Explain in detail about various sperm cell defects  
B) What are the advantages and disadvantages of Artificial Insemination?
3. A) Explain in detail about collection of semen in bulls.  
(or)  
B) Explain in detail about factors affecting semen production.
4. A) Describe in detail about recto vaginal method of AI.  
(or)  
B) Explain care and management of bulls for semen production.
5. A) Explain in detail about precautions to be taken while handling Liquid nitrogen containers.  
(or)  
B) Write in detail about artificial vagina method of semen collection.

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**B. Vocational course**  
**Dairying & Animal husbandry - Honours**  
**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**POULTRY FARMING**  
**(Credits 3+1=3)**

**UNIT -1**

ORGANIC FARMING - introduction, principles of organic farming, aims of organic production, conditions for certified organic production, mandatory requirements for layers, recommended practices for production of organic eggs or meat.

**UNIT – 2**

QUAIL FARMING – Introduction, housing and feeding management of quails, general management of quails, breeding management, diseases, challenges in quail farming, license requirement for quail farming.

**UNIT – 3**

TURKEY FARMING -Breeds of turkeys in India, Economic Parameters in Turkey Farming General turkey management, Turkey rearing systems, Floor, feeder and waterer space requirement of turkey, Care to be taken while rearing Turkeys, Feeding management of turkeys, Breeding practices, Common Diseases of Turkey and their prevention, Turkey meat and egg.

**UNIT – 4**

EMU FARMING - Introduction to Emu farming, Management of emu birds , Breeder management, Feeding management of emu bird, Health management of emu birds.

**UNIT -5**

DUCK FARMING – Duck breeds, systems of duck management, Duck feeds and Feeding, management of Stock, Duck egg incubation, Common Duck diseases.

MIXED FARMING AND POULTRY REARING – Introduction, poultry and fish farming, poultry integration with cropping systems and agroforestry, duck -cum- fish farming, Benefits of mixed farming.

**PRACTICALS**

Desi – chicken breeds

Improved breeds of poultry

Turkey breeds

Duck Breeds

**References:**

- Manual on Avian Production and Management - Ghosh Nilotpai, IBDC
- Practical manual of avian production and management - Jadhav
- Handbook of Poultry Production and Management - M F Siddique
- Livestock Production Management - N S R sastry, C Kthomas

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**IV Year – Semester VII**  
**2023-24 Admitted batch**  
**POULTRY FARMING**  
**(Credits 3+1=3)**  
**Model Paper**

Time: 3hrs

Maximum: 75 marks

**SECTION–A**

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

1. Write a short note duck – cum fish farming?
2. What are the conditions for certified Organic farming?
3. What are various breeds of ducks?
4. Write in detail about license requirement for quail farming?
5. Explain economic parameters of turkey farming?
6. What are the advantages of quail farming?
7. Write in detail about Turkey rearing systems?
8. What are Do's and Dont's in the management of Emu Chicks?

**SECTION–B**

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

1. A) Write in detail about organic farming for production of meat and eggs?  
(or)  
B) Explain breeder management of Emu birds?
2. A) Write in detail about Mixed farming and Poultry raising?  
(or)  
B) Write in detail recommended practices in Organic Farming?
3. A) Write in detail about common Duck Diseases?  
(or)  
B) Write in detail about quail farming?
4. A) Explain in detail Breeding practices in Turkey farming?  
(or)  
B) Write in detail about Duck feeds and feeding?
5. A) Explain in detail management of stock in ducks and incubation of eggs?  
(or)  
B) Write about Turkey egg and meat? Explain care to be taken in turkey rearing?



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**IV Year – Semester VIII**  
**2023-24 Admitted batch**

<b>8<sup>th</sup> Semester</b>	1.	Veterinary toxicology	Major subject	3+1=4
	2.	Avian pathology	Major subject	3+1=4
	3.	Veterinary protozoology	Major subject	3+1=4
	4.	Animal birth control programme	Skill enhancement course	3+1=4
	5.	Hatchery management and biosecurity measures	Skill enhancement course	3+1=4
	6.		Open online transdisciplinary course	2+0=2
	7.		Indian knowledge system-Audit course	-
<b>Total</b>				<b>17+5=22</b>

**ANDHRA UNIVERSITY**  
**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**VETERINARY TOXICOLOGY**  
**(Credits 3+1=4)**

**UNIT – 1**

General Toxicology: Definitions, history of toxicology, fundamentals and scope of toxicology. Sources and classification of toxicants, factors modifying toxicity, general approaches to diagnosis and treatment of poisoning.

**UNIT – 2**

Toxicity caused by metals and non-metals: Arsenic, lead, mercury, copper, molybdenum, selenium, phosphorus, fluoride, nitrates or nitrites, chlorate, common salt and urea.

**UNIT – 3**

Poisonous plants: Cyanogenetic plants, abrus, ipomoea, datura, nux vomica, castor, oxalate producing plants, plants causing thiamine deficiency, plants causing photosensitization and cotton.

**UNIT – 4**

Toxicity caused by Agrochemicals: Insecticides - Chlorinated hydrocarbons, organophosphates, carbamates, pyrethroids, newer insecticides. Herbicides, fungicides and rodenticides.

**UNIT - 5**

Fungal and bacterial toxins: Aflatoxins, rubratoxin, ochratoxin, botulinum toxin and tetanus toxin. Venomous bites and stings: Snake, scorpion, spider, bees and wasp, toad and fishes. Toxicity caused by food additives and preservatives. Drug and pesticide residue toxicology.

**PRACTICALS:**

- Collection, preservation and dispatch of material for toxicological analysis.
- Detection of heavy metals or non-metals or plant poisons.
- Demonstration of agrochemical toxicity and its antidotal therapy via simulation methods.
- Demonstration of toxic weeds and plants of local area.
- Methods of calculation of median lethal dose (LD50) or maximum tolerated dose (MTD).

**REFERENCE BOOKS:**

- Text book of Veterinary Toxicology - Sandhu, H.S. and Brar, R.S.,
- Veterinary pharmacology and toxicology - B. K. Roy
- Synopsis of veterinary pharmacology and toxicology - Vani prasad

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**VETERINARY TOXICOLOGY**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Write in detail the about classification of toxicity
2. Write a note on Blind staggers and alkali disease.
3. Write a note on mechanism of toxicity of nitrites
4. Write a note on oxalate containing plants.
5. Write a short note rubratoxins.
6. Write a note on ivermectin and milbemycin.
7. Write a short note on ANTU.
8. Briefly explain about radiation and how it causes toxicity.

**SECTION – B**

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

1. A) Explain in detail the factors modifying toxicity  
(or)  
B) Explain in detail the treatment of toxicity.
2. A) Write the sources, factors affecting toxicity, absorption, consequences, clinical symptoms, post-mortem lesions, diagnosis and treatment of arsenic poisoning.  
(or)  
B) Describe in detail the patho-physiology of Iron toxicosis.
3. A) Write the sources, factors affecting toxicity, absorption, consequences, clinical symptoms, post-mortem lesions, diagnosis and treatment of cyanide poisoning.  
(or)  
B) Explain in detail about photosensitization.
4. A) Write the toxicokinetics, mechanism of action, clinical symptoms, PM lesions, diagnosis and treatment of aflatoxin poisoning.  
(or)  
B) Write a detail note on organophosphorus compounds.
5. A) Explain in detail about warfarin.  
(or)  
B) Write in detail about industrial toxicants and occupational hazards.

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**AVIAN PATHOLOGY**  
**(Credits 3+1=3)**

**UNIT – 1**

Viral Diseases: Etiology, Pathogenesis, clinical findings, gross and microscopic lesions and diagnosis of Ranikhet disease, infectious bursal disease, infectious bronchitis, fowl pox, Avian Influenza, Marek's disease, egg drop syndrome.

**UNIT - 2**

Bacterial Diseases: Etiology, Pathogenesis, clinical findings, gross and microscopic lesions and diagnosis of infectious coryza, clostridial diseases, salmonella infections, fowl cholera and Colibacillosis

**UNIT – 3**

Etiology, Pathogenesis, clinical findings, gross and microscopic lesions and diagnosis of Mycoplasma infections, chlamydiosis.

**UNIT- 4**

Etiology, Pathogenesis, clinical findings, gross and microscopic lesions and diagnosis of aspergillosis, thrush, favus and aflatoxicosis.

**UNIT -5**

Etiology, Pathogenesis, clinical findings, gross and microscopic lesions of protozoal diseases (coccidiosis, Histomoniasis), ectoparasites, Pathology of important vices and miscellaneous conditions.

**PRACTICALS**

Post mortem examination and diagnosis of poultry diseases based upon clinical signs and gross lesions

Writing of postmortem report.

Collection, preservation and dispatch of morbid materials in poultry diseases. Clinical examination of blood, faeces and other tissues/fluids for poultry disease diagnosis

**References:**

- A Textbook of Veterinary Special Pathology, Infectious Diseases of Livestock and Poultry - J.L Vegad and A.K Katiyar
- Veterinary Pathology 6th Ed. (2003) - Ganti Sastri and Rama Pao.
- Textbook of Veterinary General Pathology 2nd Ed. - J. L. Vegad

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**AVIAN PATHOLOGY**  
**(Credits 3+1=3)**  
**Model Paper**

Time: 3hrs

Maximum: 75 marks

**SECTION–A**

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

1. Write a short note on ectoparasites in poultry?
2. Explain Favus?
3. What are various vices of poultry?
4. Write in detail about fowl typhoid?
5. What is aflatoxicosis?
6. Explain in detail about pathogenesis of coccidiosis?
7. What are clinical findings in salmonella infections?
8. Write a short note on egg drop syndrome?

**SECTION–B**

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

1. A) Explain in detail etiology, pathogenesis, clinical findings, gross lesions and diagnosis of Ranikhet disease?  
(or)  
B) Write in detail about Avian Influenza?
2. A) Explain in detail etiology, pathogenesis, clinical findings, gross lesions and diagnosis of Marek's disease?  
(or)  
B) Write in detail about Mycoplasmal infections in poultry?
3. A) Explain in detail etiology, pathogenesis, clinical findings, gross lesions and diagnosis of Infectious Coryza?  
(or)  
B) Write in detail about Chlamydiosis?
4. A) Explain in detail etiology, pathogenesis, clinical findings, gross lesions and diagnosis of Aspergillosis?  
(or)  
B) Explain in detail etiology, pathogenesis, clinical findings, gross lesions and diagnosis of Coccidiosis?
5. A) Explain in detail Infectious Bursal Disease?  
(or)  
B) Explain in detail about Clostridial infections?

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**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**VETERINARY PROTOZOOLOGY**  
**(Credits 3+1=4)**

**UNIT - 1**

Introduction to protozoology, historical account of protozoa, structure of protozoa, nutrition of protozoa, excretion of protozoa, reproduction of protozoa, free living and parasitic protozoa, economic importance of protozoa

**UNIT – 2**

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Trypanosoma* (*Trypanosoma cruzi*, *Trypanosoma evansi*, *Trypanosoma equiperdum*, *Trypanosoma theleri*)

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Leishmania* (*Leishmania tropica*, *Leishmania donovani*)

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Giardia* (*Giardia intestinalis*)

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Histomonas* (*Histomonas meleagridis*)

**UNIT – 3**

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Trichomonas* (*Trichomonas foetus*, *Trichomonas gallinae*)

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Entamoeba* (*Entamoeba histolytica*)

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Eimeria* infecting ruminants and poultry

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Cryptosporidium*

**UNIT – 4**

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Sarcocystis*

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Toxoplasma* (*Toxoplasma gondii*)

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Plasmodium* (*Plasmodium gallinaceum*)

**UNIT - 5**

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Babesia* infecting domestic ruminants and pet animals

Life cycle, pathogenesis, clinical signs, diagnosis, treatment, prevention and control of genus *Theileria* infecting domestic ruminants and pet animals

**PRACTICALS:**

- Faecal examination techniques, egg counts, examination of faecal samples for the protozoan cysts or oocysts or trophozoites.
- Methods of collection, fixation, preservation, staining and mounting of various types of parasites.
- Demonstration of gross and microscopic lesions of parasites.

**References:**

- Helminths, Arthropods and Protozoa of Domesticated Animals - E.J.L. Soulsby.
- Veterinary Parasitology - G.M. Urquhart et. al.
- A Text Book of Veterinary Parasitology - B.B. Bhatia, K.M.L. Pathak. & D.P. Banerjee

**ANDHRA UNIVERSITY**  
**B.Vocational course**  
**Dairying & Animal husbandary - Honours**  
**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**VETERINARY PROTOZOOLOGY**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Write a short note on locomotion of protozoa.
2. Explain about nutrition in protozoa.
3. What are the harmful effects caused by protozoa?
4. Write a short note on Giardia.
5. Explain the pathogenesis and clinical signs of *Histomonas meleagridis*
6. Explain in detail about *Trichomonas gallinae*
7. Explain in detail the pathogenesis caused by *Trichomonas foetus* in cow and bulls.
8. Write a short note on pathogenesis caused by Sarcocystis in cow.

**SECTION – B**

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

1. A) Explain in detail about reproduction of protozoa.  
(or)  
B) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of *Trypanosoma evansi*
2. A) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of *Leshmania tropica*  
(or)  
B) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of Eimeria infecting poultry.
3. A) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of *Toxoplasma gondii*.  
(or)  
B) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of *Plasmodium gallinaceum*.
4. A) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of Babesia.  
(or)  
B) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of Theileria.



5. A) Explain in detail the economic importance of protozoa.

(or)

B) Explain in detail the life cycle, pathogenesis, clinical signs, diagnosis, treatment and control of *Entamoeba histolytica*.

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**ANIMAL BIRTH CONTROL PROGRAMME**  
**(Credits 3+1=4)**

**UNIT – 1**

Survey of the stray dog population in the area. General consideration. Points to be noted while conducting the field survey. Counting of dogs. Need for a female centred approach. Humane capture and handling of stray dogs. General principles. Catching techniques. Identification of stray dogs. Dos and Don'ts with regards to catching of dogs.

**UNIT – 2**

Transportation of stray dogs. Vehicular design considerations. Basic specifications for dog catching vans. Dos and Don'ts in transportation. Choice of vehicles. Infrastructure for ABC programmes. Housing. Kennel management. Energy resources. Ventilation. Number of kennels. Operating facilities. Anti-Rabies vaccination.

**UNIT – 3**

Key elements for a successful ABC programme. Identification of stray dogs while being caught. Permanent identification. Record keeping. Monitoring programme effectiveness. Pre-operative considerations. Preliminary checks. Pre-surgical checks. Pre-operative preparations.

**UNIT- 4**

Surgery for ABC programmes. Anaesthetic and surgical protocols. Ear notching. Sterilisation-General considerations. Surgical procedure for female dogs. Male surgical sterilization.

**UNIT - 5**

Post-operative care, Anti-rabies vaccinations and release of dogs. Post-surgical care-General considerations. Use of analgesics. Use of antibiotics. Anti-rabies vaccines; General considerations. Guidelines for release of sterilized and vaccinated dogs. Education of public. Euthanasia, post-mortem examination and verification of ABC surgeries.

**PRACTICALS:**

- Visit to animal rescue centre.
- Visit to animal birth control programme unit.
- Guest lecture with police officer involved in confiscation of vehicles carrying out illegal transportation of animals.
- Interaction with animal welfare activists.
- Visit to Blue cross unit.

- Visit to nearest SPCA (Society for prevention of cruelty to animals).

**REFERENCE BOOKS:**

- Manual on “Standard operating procedures” of Animal birth control programme – Animal welfare board of India.
- Can a stray dog become man’s best friend? 5 steps to harmonious living with stray dogs – Kuhu Roy.
- Study material of Post graduate diploma on animal welfare (PGDAW) – IGNOU
- Animal welfare ethics and Jurisprudence – Kirti Dua
- A practical approach to animal welfare laws – Noel Sweeney
- Veterinary Jurisprudence and post mortem – Ranum Dabas

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**ANIMAL BIRTH CONTROL PROGRAMME**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. What are the points to be considered while doing a field survey?
2. Write in detail about the Do's and Don'ts with regard to catching of dogs.
3. Explain in detail about first aid in case of a dog bite.
4. Write a short note general considerations for anti-rabies vaccination.
5. Write in detail about confirmation of death in case of stray dogs.
6. Explain about preoperative preparation of patient for surgery.
7. Explain preparation of patient prior to surgery.
8. Write the general considerations of record keeping in an ABC Program.

**SECTION – B**

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

1. A) Explain in detail about the methods for conducting a dog population count.  
(or)  
B) Explain in detail about the techniques for catching street dogs.
2. A) Explain in detail about transportation of stray dogs.  
(or)  
B) What are the methods used for identification of stray dogs.
3. A) Explain in detail about preparation of patient for surgery.  
(or)  
B) Explain in detail about clinical complications seen following an ovario-hysterectomy surgery.
4. A) Describe in detail about general considerations of post-surgical care of dogs.  
(or)  
B) Explain the guidelines for release of the sterilized and vaccinated dogs.
5. A) Explain in detail about castration in male dogs.  
(or)  
B) Write in detail about midline spaying technique in female dogs.

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**HATCHERY MANAGEMENT AND BIO SECURITY MEASURES**  
**(Credits 3+1=4)**

**UNIT – 1**

Importance of hatchery management, different types of poultry houses, layout of poultry farm, classification of poultry housing systems (Free range or extensive system, Semi-intensive system, intensive system), brooding management, Receiving of chicks, grower management, layer management, layer production indices, biosecurity measures. Principles of incubation and hatchery management practices. Factors affecting fertility and hatchability, selection and care of hatching eggs and hatchery hygiene.

**UNIT – 2**

Candling, sexing, grading, packing and disposal of hatchery waste. Economics of hatchery business – Troubleshooting hatchery failures–Computer applications in hatchery management.

**UNIT – 3**

Poultry waste management, pollution and environmental issues. Organic and hill farming. Mixed or integrated poultry farming

**UNIT – 4**

Vertical & horizontal integration in commercial poultry production – Contract farming. Export or import of poultry produce and marketing.

**UNIT – 5**

Bio-security- conceptual biosecurity, structural biosecurity and operational biosecurity, principles of disease management. Health care for common poultry diseases – vaccination. General principles of poultry medication.

**PRACTICAL:**

- Hatchery layout and design.
- Project report for establishing a broiler farm.
- Project report for establishing a layer farm.
- Project report for establishing a breeder farm.
- Visit to commercial poultry farms or hatchery or feed mill.

**REFERENCES:**

- Manual of Avian Production and Management - Nilotpal Ghosh and Rajarshi Samanta
- Modern Poultry Farming - Murd, L.M.
- Commercial Broiler Production - Johari, D.C.and Hussain, K.Q.

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**IV Year – Semester VIII**  
**2023-24 Admitted batch**  
**HATCHERY MANAGEMENT AND BIO SECURITY MEASURES**  
**(Credits 3+1=4)**  
**Model paper**

Time: 3hrs

Maximum: 75marks

**SECTION – A**

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

1. Write a short note on free range and deep litter housing system.
2. Explain about restricted feeding.
3. Explain in detail about principles of disease management.
4. Write a short note on candling
5. Write in detail about computer applications of hatchery management
6. Explain about sexing and grading of eggs
7. Explain about the export and import of poultry products
8. Write about disposal of hatchery wastes.

**SECTION – B**

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

1. A) Write the classification of housing systems. Explain in detail any 3 types of housing systems.

(or)

B) Explain in detail about layout of poultry farm.

2. A) Explain in detail about brooding of chicks.

(or)

B) Explain in detail about the bio-security measures that are to be taken in a poultry farm.

3. A) Explain in detail about disposal of dead bird.

(or)

B) Explain in detail about methods of incubation.

4. A) Describe in detail about factors affecting fertility and hatchability.

(or)

B) Explain any five common poultry diseases.

5. A) Explain in detail about poultry waste management

(or)

B) Write in detail about vaccination in layer birds.