From: THE REGISTRAR

To
The Principal,
A.M.A.L. College,
Anakapalle.

Sir/Madam,

Sub : Approval of Syllabus B. Vocational course – Dairying & Animal Husbandry, w.e.f. 2020-21 – Requesting - Reg.

Ref : 1. Letter dt. 22-07-2021 received from Principal, A.M.A.L. College, Anakapalle.
3. Minutes of the meeting of the Board of Studies, dt.21-07-2021.

* * *

I am by direction to inform that the Principals of the affiliated colleges to strictly adhere to the APSCHE guidelines for the revised Choice Based Credit System, Approval of Syllabus of B. Vocational course-Dairying & Animal Husbandry, w.e.f. 2020-21 academic year placed in A.U. website.

Thanking you,

Yours faithfully,

(B. RAMACHANDER)
ASSISTANT REGISTRAR (ACADEMIC)

Copies to:
1. The Dean of Academic Affairs, A.U., VSP.
3. The Dean, CDC, A.U., Vsp.
4. The Dean, Confidential, A.U., Vsp.
5. The Controller of Examinations, A.U., Vsp.
7. The Secretary to V.C., Rector Table, P.A. to Registrar, A.U., Vsp.
8. The Director, Computer Centre, A.U., Vsp.
9. The Secretary to APSCHE.
10. The Veterinary Council of India,
11. The Registrar, Veterinary Council. A.P.
12. The Secretary to ICAR.
13. O.C. & O.O.F.
PROCEEDINGS OF THE VICE-CHANCELLOR

Sub: Approval of Syllabus B. Vocational course- Dairying & Animal Husbandry Course, w.e.f. 2020-21 - Orders - Issued.

Read:
1. Letter dt. 22-07-2021 received from Principal, A.M.A.L. College, Anakapalle.
3. Minutes of the meeting of the Board of Studies, dt.21-07-2021.

ORDER:

The Hon’ble Vice-Chancellor has ordered that the ref read above on the revised Choice Based Credit System (CBCS) Approval of Syllabus of B. Vocational course - Dairying & Animal Husbandry, w.e.f. 2020-21 academic year and be placed in A.U. website.

It is further ordered to place the matter before the ensuing meeting of the Academic Senate for ratification.

(BY ORDER)

(B. RAMACHANDER)
ASSISTANT REGISTRAR (ACADEMIC)

To:
The Dean, Academic Affairs, A.U. Vsp.

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12. The Secretary to ICAR.
13. O.C. & O.O.F.
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**Total** 22+6=28 24+6=30 24+6=30 24+12=36 24+12=36 **Grand total** 115+65+180
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Andhra University

B.Vocational course
Animal husbandry & Dairying
I Year – Semester I
2020-21 Admitted batch

English - 1
(Credits 3+0=3)

By the end of the course the learner will be able to:

- Use grammar effectively in writing and speaking.
- Demonstrate the use of good vocabulary
- Demonstrate an understanding of writing skills
- Acquire ability to use Soft Skills in professional and daily life.
- Confidently use the tools of communication skills

I. UNIT: Listening Skills
   i. Importance of Listening
   ii. Types of Listening
   iii. Barriers to Listening
   iv. Effective Listening

II. UNIT: Speaking Skills
   a. Sounds of English: Vowels and Consonants
   b. Word Accent
   c. Intonation

III. UNIT: Grammar
   a) Concord
   b) Modals
   c) Tenses (Present/Past/Future)
   d) Articles
   e) Prepositions
   f) Question Tags
   g) Sentence Transformation (Voice, Reported Speech & Degrees of Comparison)
   h) Error Correction

IV. UNIT: Writing
   i. Punctuation
   ii. Spelling
   iii. Paragraph Writing

V. UNIT: Soft Skills
   a. SWOC
   b. Attitude
   c. Emotional Intelligence
   d. Telephone Etiquette
   e. Interpersonal Skills
+ విషయం చూపాదు:

1. క్రమంగా సోషిఫికాలు స్థాపనలు, మాటరు సేవల సమస్యల పరిశీలన.

2. క్రమంగా సోషిఫికాలు స్థాపనలు, మాటరు సేవల పరిశీలన.

3. సోషిఫికాలు స్థాపనలు, మాటరు సేవల పరిశీలన.

4. సోషిఫికాలు స్థాపనలు, మాటరు సేవల పరిశీలన.

5. సోషిఫికాలు స్థాపనలు, మాటరు సేవల పరిశీలన.

(ఇంగ్లీషులో ఫ్యాక్స్మార్క్స్ సుమారు ప్రతి పదార్థాలకు ప్రతి రాశుండి)
మహావర్ణ-I
చట్టం - గంగన్
మాణిక్యం-పురాణం-వైమానిక-విమానిక-(26-57 పాముల)

మహావర్ణ-II
చట్టం - వయోగ్రామ
మాణిక్యం-పురాణం-విమానిక-(49-86 పాముల)

మహావర్ణ-III
చట్టం - శఃధర
మాణిక్యం-పురాణం-విమానిక-(116-146) పాముల

మహావర్ణ-IV
చట్టం - పండ్లు (సందర్భం శివార్థం-విమానిక చట్టం 108-112
'మాణిక్యం' పురాణం విమానిక చట్టం (108).
..... వివిధ పండ్లు' (112) వం. అంతర్గతి సంఖ్యలో
చాలామం, ఆదిమ, పంచాయతీలు, శతమణి, 1911.

మహావర్ణ-V
చట్టం - శఃధర
మాణిక్యం-పురాణం-(40-87) పాముల

✦చాలామం✦
నామం: చట్ట చాలామం, చాలామం రకం, కార్యాలయాలు, మాణిక్యం, పండ్లు, చాలామం
మండలం: చాలామం మండలం, చాలామం రకం, చాలామం రకం, చాలామం
హామైంది:
అధోరామం, ఆదిమ, తిరుమలా, శతమణి, చాలామం రకం

మాణిక్యం:
పురాణం: చాలామం, చాలామం, చాలామం, చాలామం
పండ్లి: చాలామం, చాలామం, చాలామం, చాలామం, చాలామం, చాలామం, చాలామం, చాలామం
తాళ్ళ విధానం:
1. తృగీని చిహ్నాలు: చిన్నబాగుడ-దక్షిణ చిన్నబాగుడ సమయాన స్థాయి
2. ప్రత్యేక చిహ్నాలు: మొట్టముగా దక్షిణ చిన్నబాగుడ సమయాన విభాగం
3. బాగుడ పరిషత్తు: కమలి
4. సంవత్సర మండపాని: బాగుడ మండపాని
5. లాగ్నపూరం: సంతోషం

ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం:
1. బాగుడ మండపాని పరిషత్తు, మండపాని సాంప్రదాయిక పరిషత్తు గారులు ప్రయోజనం అయితే,
మాత్రం ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం; అందుకు మాత్రమే ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం కాని తప్పిస్తాయి.
2. ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం మండపాని సమయాన విభాగం
(కమలి/మండపాని)
3. ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం మండపాని సమయాన విభాగం
(కమలి/మండపాని)
4. ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం మండపాని సమయాన విభాగం
5. ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం

ప్రత్యేక చిహ్నాలు పరిషత్తు (కమలి/మండపాని)
1. కమలి పరిషత్తు దూరం: (423మీ) (2-1) 1×8=8 కమ్మ
2. మండపాని పరిషత్తు దూరం: (2-1) 1×3=3 కమ్మ
3. కమలి పరిషత్తు దూరం: (6-4) 4×3=12 కమ్మ
4. మండపాని పరిషత్తు దూరం: (6-4) 4×3=12 కమ్మ
5. కమలి పరిషత్తు (480మీ) దూరం: (6-3) 3×8=24 కమ్మ
6. మండపాని పరిషత్తు (480మీ) దూరం: (6-4) 4×1=4 కమ్మ

ప్రత్యేక చిహ్నాలు పరిషత్తు విభాగం (కమలి/మండపాని)
1. కమలి పరిషత్తు దూరం: (423మీ) (2-1) 1×4=4 కమ్మ
2. మండపాని పరిషత్తు దూరం: (2-1) 1×4=4 కమ్మ
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
I Year – Semester I
2020-21 Admitted batch
HUMAN VALUES AND PROFESSIONAL ETHICS
(Credits 4+2=6)

Learning Outcome:
On completion of this course, the UG students will be able to
Understand the significance of value inputs in a classroom and start applying them in their
life and profession
Distinguish between values and skills, happiness and accumulation of physical facilities,
the Self and the Body, Intention and Competence of an individual, etc.
Understand the value of harmonious relationship based on trust and respect in their life and
profession
Understand the role of a human being in ensuring harmony in society and nature.
Distinguish between ethical and unethical practices, and start working out the strategy to
actualize a harmonious environment wherever they work.

UNIT: 1 Introduction – Definition, Importance, Process & Classifications of Value
Education
Understanding the need, basic guidelines, content and process for Value Education
Understanding the thought provoking issues; need for Values in our daily life
Choices making – Choosing, Cherishing & Acting
Classification of Value Education: understanding Personal Values, Social Values, Moral
Values & Spiritual Values.

UNIT: 2 Harmony in the Family – Understanding Values in Human Relationships
Understanding harmony in the Family- the basic unit of human interaction
Understanding the set of proposals to verify the Harmony in the Family;
Trust (Vishwas) and Respect (Samman) as the foundational values of relationship
Present Scenario: Differentiation (Disrespect) in relationships on the basis of body, physical
facilities, or beliefs.
Understanding the Problems faced due to differentiation in Relationships
Understanding the harmony in the society (society being an extension of family):
Samadhan, Samridhi, Abhay, Sah-astitva as comprehensive Human Goals
Visualizing a universal harmonious order in society- Undivided Society (AkhandSamaj),
Universal Order (SarvabhaumVyawastha )- from family to world family.

UNIT: 3 Professional Ethics in Education
Understanding about Professional Integrity, Respect & Equality, Privacy, Building Trusting
Relationships.
Understanding the concepts; Positive co-operation, Respecting the competence of other
professions.
Understanding about Taking initiative and Promoting the culture of openness.
Depicting Loyalty towards Goals and objectives.
Text Books:

References:

Mode of Evaluation:
Assignment/ Seminar/Continuous Assessment Test/Semester End Exam.

Co curricular Activities:
1. Visit to an Old Age Home and spending with the inmates for a day.
2. Conduct of Group Discussions on the topics related to the syllabus.
3. Participation in community service activities.
4. Working with a NGO like Rotary Club or Lions International, etc.
ANDHRA UNIVERSITY  
B.Vocational course  
Animal husbandry & Dairying  
I Year – Semester I  
2020-21 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
VETERINARIAN IN SOCIETY

Model paper

Time: 2hrs  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.
UNIT - 1
Introduction to anatomy and branches of anatomy and descriptive terms used in anatomy and study of anatomical planes. General Osteology. Study of structure of bone. Study of skeletal system and different bones of cow. General arthrology. Study of different joints. General myology. Study of muscles of different regions of the body (excluding origin, insertion, blood supply & nerve supply).

UNIT – 2

UNIT – 3
Study of skeletal system of dog. Study of digestive, respiratory, and urogenital systems of dog and poultry.

UNIT-4

UNIT-5
Neurology. Study of neuron, nerve trunk, meninges, brain and spinal cord. Study of cranial nerves, spinal nerves, brachial plexus, lumbo sacral plexus. Organs of special senses. Study of eye, ear, skin, and hoof. Study of endocrine glands

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)
ANDHRA UNIVERSITY
B. Vocational course
Animal husbandry & Dairying
I Year – Semester I
2020-21 Admitted batch
BASICS OF VETERINARY ANATOMY
(Credits 4+2=6)
Model paper

Time: 3hrs                   Maximum:75marks

SECTION – A

Answer any FIVE questions. Each question carries equal marks. (5*5 =25)
1. List out various branches of Anatomy and explain them in brief.
2. Describe the functions of rumen, reticulum, omasum and abomasum in ox.
4. Explain the location of various organs in thoracic cavity.
5. List out the cranial nerves, blood vessels and lymph nodes of head and neck region
6. Draw the diagram of digestive system of dog, label the parts and explain in brief the different parts.
7. Write in detail about respiratory system of poultry.
8. Write in detail about mammary gland in cow.

SECTION – B

Answer All the questions. Each question carries TEN marks (5*10 =50)
1. A) write the borders of badminal cavity and what are the various organs located in the abdominal cavity.
   (or)
   B) Draw the diagrams and explain the structure of Femur and Humerus.
2.   A) How to determine the age by dentition in Ox?
        (or)
   B) What is linea alba. Describe its formation.
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 functioning of heart with the help of a well labelled diagram.
UNIT - 1

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

PRACTICALS
Collection of blood samples - Separation of serum and plasma
Enumeration of erythrocytes.
Enumeration of leucocytes.
Differential leukocytic count.
Platelet count.
Estimation of haemoglobin.
Haematocrit - erythrocyte sedimentation rate - packed cell volume - coagulation time-bleeding time.
Counting of rumen motility
Urine analysis-physiological constituents and pathological determinates
Behavioural signs of oestrus.
Sperm motility.
Sperm concentration - live and dead - abnormal sperm count.
Health parameters of animals- body temperature, pulse, respiration and heart rate.

**Reference books:**

1. Textbook of Veterinary Physiology  
   Bradley Klein, Elsevier
2. Animal physiology  
   M. Armugam, A. Mariakuttukam
3. Physiology of domestic animals  
   Dukes
4. Text book of Veterinary physiology  
   B.Bhattacharya
SECTION – A

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

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

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) pulmonary volumes and pulmonary capacities.
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.
UNIT -1
Scope and Importance of Biochemistry
Disorders of Carbohydrate Metabolism: Diabetes mellitus, Ketosis, Bovine Ketosis, Pregnancy toxemia, hypoglycaemia in baby pigs, hyperinsulinism in Dogs. Hormonal control of carbohydrate metabolism and regulation of blood sugar.

UNIT -2

UNIT -3
Lipid Profile in disease diagnosis. Clinical Enzymology - Diagnostic importance of non-functional plasma enzymes and Isoenzymes,

UNIT -4
Liver function tests - Classification - Biochemical tests for differential diagnosis. Biochemical tests of renal function - Urine analysis - Role of BUN, Uric acid and Creatinine in diagnosis.

UNIT -5

Practicals:
Detection of Pathological Constituents in Urine; Assays of ALT and AST in Serum; Acute phase proteins (AorG Ratio); Estimation of total serum cholesterol, Blood Urea Nitrogen, creatinine, serum bilirubin (Direct, Indirect and Total). Principles of various diagnostic tests, normal and abnormal values in different species.

Reference books:
1. Text book of Veterinary Biochemistry R.S.Dhanotia
2. Clinical Biochemistry of domestic animals Charles E Cornelius
3. Biochemistry of domestic animals Jiro Jerry kaneko, John W.;Harvey, Michael L.Bruss
4. Principles of Biochemistry Lehinger
5. Clinical Biochemistry of domestic animals Jerry Kaneko, John W Harvey, Michel L Bruss
6. Clinical Biochemistry Racek, Jaroslav
VETERINARY BIOCHEMISTRY
(Credits 4+2=6)

Model paper

Time: 3hrs                  Maximum: 75marks

SECTION – A

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

1. Enlist various digestive disorders in animals and explain any two in ruminates
2. Write in detail about various biochemical tests for renal function
3. What is ketosis? Explain about bovine Ketosis
4. Enlist various Liver function tests and biochemical significance of lactate dehydrogenase (LDH) and Alkaline phosphatase (ALP)
5. What are the different lipid profile tests used in veterinary practice?
6. What is an acid-base disturbance? What are the two systems that compensate for acid base disturbance?
7. What are indications of fluid therapy? Explain about biochemical basis of fluid therapy in veterinary practice?
8. Importance of Importance of Biochemistry and its significance for disease diagnosis in veterinary practice?

SECTION – B

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

1. A) What is Urine analysis
   (or)
   B) Explain the importance of Acute Phase proteins
2. A) Explain in detail the Diabetes mellitus in dogs
   (or)
   B) Write about Hypoglycaemia in baby pigs
3  A) Write in detail the Metabolic acidosis
   (or)
   B) Describe hormonal control of carbohydrate metabolism
4. A) Diagnostic importance of non-functional plasma enzymes
   (or)
   B) Hypothyroidism in dogs
5. A) Clinical significance of plasma proteins
   (or)
   B) Pregnancy toxaemia in cattle
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<th>Course</th>
<th>Type</th>
<th>Credits</th>
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<td>English -2</td>
<td>Language</td>
<td>3+0=3</td>
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<tr>
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<td>Telugu</td>
<td>Language</td>
<td>3+0=3</td>
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<td>3.</td>
<td>Information and communication technology</td>
<td>Life skills</td>
<td>2+0=2</td>
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<td>4.</td>
<td>Pet and zoo animal management</td>
<td>Skill development</td>
<td>2+0=2</td>
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<td>5.</td>
<td>Dairy Farm General Management</td>
<td>Skill development</td>
<td>2+0=2</td>
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<td>6.</td>
<td>Livestock production and management</td>
<td>Core subject</td>
<td>4+2=6</td>
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<td>7.</td>
<td>Avian production and management</td>
<td>Core subject</td>
<td>4+2=6</td>
</tr>
<tr>
<td>8.</td>
<td>Animal genetics and breeding</td>
<td>Core subject</td>
<td>4+2=6</td>
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A Course in Reading & Writing Skills

Use reading skills effectively
Comprehend different text
Interpret different types of texts
Analyse what is being read
Build up a repository of active vocabulary
Use good writing strategies
Write well for any purpose
Improve writing skills independently for future needs

I. UNIT

Prose: 1. How to Avoid Foolish Opinions Bertrand Russell
Skills: 2. Vocabulary: Conversion of Words
: 3. One Word Substitutes
: 4. Collocations

II. UNIT

Prose: 1. The Doll's House Katherine Mansfield
Poetry: 2. Ode to the West Wind P B Shelley
Non-Detailed Text: 3. Florence Nightingale Abrar Mohsin
Skills: 4. Skimming and Scanning

III. UNIT

Prose: 1. The Night Train at Deoli Ruskin Bond
Poetry: 2. Upagupta Rabindranath Tagore
Skills: 3. Reading Comprehension
: 4. Note Making/Taking

IV. UNIT

Poetry: 1. Coromandel Fishers Sarojini Naidu
Skills: 2. Expansion of Ideas
: 3. Notices, Agendas and Minutes

V. UNIT

Skills: 2. Curriculum Vitae and Resume
: 3. Letters
: 4. E-Correspondence
శాస్త్రశాఖ -
అమ్మకు మాత్రమూర్తి లాంటివి, మాత్రమూర్తి మతిని అమ్మకు మినిటు చేసుకోండాను.
1. నిర్మాణం ప్రడ్రాంటన ఫార్మాట్ విముఖం పంచాల్ల లోపల విముఖం అనే విముఖం నకు నిర్మాణం చేసుకోండాను.

2. సాధనముల గురించి నిర్మాణం చేసుకోండాను “నందు నందు, నందు, నందు, నందు” చేయండం నిర్మాణం చేసుకోండాను.

3. కరుగుడి, అమ్మకు మూడు మాటలు మాటారు ఈంపాడు చేసుకోండాను. అమ్మకు సాధనముల కుటుంబాన్ని గుర్రం చేసుకోండాను.

4. బాతకు ప్రదుషణా రైతుడు ప్రకటన చేసుకోండాను. ప్రదుషణా రైతుడు ప్రకటన చేసుకోండాను, కరుగుడి ఎల్లమంద యుగారు యుగారు ప్రదుషణా చేయండం నిర్మాణం చేసుకోండాను.

5. అనుకుంటాను ప్రదుషణ ప్రదుషణా రైతుడు ప్రకటన చేసుకోండాను, ప్రదుషణా రైతుడు ప్రకటన చేసుకోండాను.

మాధ్యమిక-ప్రకటన

మాధ్యమిక-ప్రకటన

1. గట్టుగా బ్యాడియా- విస్తృతి
2. ఎఖాసం - ఎఖాసం ఎఖాసం

(ఎఖాసం గుడిపందలం - మాటం మాటం మాటం)

3. కరుగుడి కంటెంటు - కరుగుడి కంటెంటు (ఎఖాసం ఎఖాసం ఎఖాసం)

4. రామాను - రామాను రామాను (ఎఖాసం ఎఖాసం ఎఖాసం)

మాధ్యమిక-ప్రకటన

5. కరుగుడి కంటెంటు - కరుగుడి

6. ఎఖాసం (ఎఖాసం) - ఎఖాసం ఎఖాసం

7. నిర్మాణం ప్రకటనం? - నిర్మాణం ప్రకటనం ప్రకటనం

మాధ్యమిక-ప్రకటన

8. కరుగుడి ఎఖాసం - కరుగుడి
9. పిల్లి రోతి (పిల్లి) - మాపిన తమిళనాడు జేట్టు (హిందు అమృతానికి ఎస్సీ)
10. పిల్లి - (పిల్లి మాంసాలు) - దీపావళి నాం తమిళనాడు నాటికి  4. దిశాని మాంసాలు
11. సుమారు 'దిశాని' - మాంసాలు
12. విశ్వనాథ కార్మికులు - మాంసాలు
13. "అభయారణ్య, దిశాని అమృతానికి 'పిల్లి మాంసాలు' (పిల్లి మాంసాలు)"
   దిశాని మాంసాలు

14. అన్న చేపించిన సుమారు - మాంసాలు
15. ఒత్తడి వృద్ధి భయము, అన్న మాంసాలు ఎస్సీ

ఎండ (రధ్యం/సమాచారం):
1. గుహ సూచికా రధ్యం/సమాచారం : ద్వారం 'పిల్లి మాంసాలు' అంటే 1-22, గుహం విశ్వనాథ రధ్యం
2. ద్వారం నామాంగా రధ్యం/సమాచారం : ద్వారం ఉదయానికి రధ్యం/సమాచారం, గుహం 118-130,
   గుహం ఉదయానికి రధ్యం/సమాచారం
3. ద్వారం నామాంగా రధ్యం/సమాచారం : ద్వారం నామాంగా రధ్యం, గుహం 1-17, గుహం ఉదయానికి రధ్యం/సమాచారం
4. ద్వారం నామాంగా రధ్యం/సమాచారం : ద్వారం నామాంగా రధ్యం, గుహం 17-25 గుహం ఉదయానికి రధ్యం/సమాచారం
5. ద్వారం నామాంగా రధ్యం/సమాచారం: ద్వారం నామాంగా రధ్యం, గుహం 213-217 గుహం ఉదయానికి రధ్యం/సమాచారం
6. ఉదయానికి ద్వారం విశ్వనాథ - గుహం ఉదయానికి రధ్యం/సమాచారం
7. పిల్లి మాంసాలు - పిల్లి మాంసాలు రధ్యం/సమాచారం
8. పిల్లి మాంసాలు - పిల్లి మాంసాలు రధ్యం/సమాచారం

+ భారతీయ ఆధ్యాత్మిక సంస్కృతి శాస్త్రానికం:
1. మామూలు పిల్లి మాంసాలు వాస్తువు శాస్త్రానికం, మామూలు పిల్లి మాంసాలు పిల్లి మాంసాలు రధ్యం/సమాచారం
2. పిల్లి మాంసాలు రధ్యం/సమాచారం, అధ్యాత్మిక సంస్కృతి పిల్లి మాంసాలు
3. మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం, మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం
4. మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం
5. మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం, మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం
6. మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం, మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం
7. మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం, మామూలు పిల్లి మాంసాలు రధ్యం/సమాచారం
8. మామూలు పిల్లి మాంసాలు పిల్లి మాంసాలు రధ్యం/సమాచారం.
ముఖ్యం

మిగిలిన సాధనాలు సేకరించడానికి ప్రాంతాలు అందుకుంటుంది. 5×5=25 మంత్ర.

2.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

3.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

4.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

5.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

6.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

7.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

8.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

9.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

10.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

11.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

12.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.

13.

మాట్స్‌ల ప్రాంతాలు

మాట్స్‌ల ప్రాంతాలు 5 మంత్రాలు సాధించడానికి ప్రాంతాలు మరో కట్టడం లేదు. 5×10=50 మంత్ర.
Objectives:
This course aims at acquainting the students with basic ICT tools which help them in their day to day and life as well as in office and research.

Course outcomes: After completion of the course, student will be able to:

1. Understand the literature of social networks and their properties.
2. Explain which network is suitable for whom.
3. Develop skills to use various social networking sites like twitter, flickr, etc.
4. Learn few GOI digital initiatives in higher education.
5. Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.

SYLLABUS

UNIT-I: (08 hrs)
Fundamentals of Internet: What is Internet?, Internet applications, Internet Addressing – Entering a Web Site Address, URL – Components of URL, Searching the Internet, Browser – Types of Browsers, Introduction to Social Networking: Twitter, Tumblr, LinkedIn, Facebook, flickr, Skype, yahoo, YouTube, WhatsApp.

UNIT-II: (08 hrs)
E-mail: Definition of E-mail - Advantages and Disadvantages – User Ids, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management.

G-Suite: Google drive, Google documents, Google spreadsheets, Google Slides and Google forms.

UNIT-III: (10 hrs)
Overview of Internet security, E-mail threats and secure E-mail, Viruses and antivirus software, Firewalls, Cryptography, Digital signatures, Copyright issues.

What are GOI digital initiatives in higher education? (SWAYAM, SwayamPrabha, National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, Virtual

**RECOMMENDED CO-CURRICULAR ACTIVITIES:** (04 hrs)

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz and Group Discussion
4. Slip Test
5. Try to solve MCQ’s available online.
6. Suggested student hands on activities:
   a. Create your accounts for the above social networking sites and explore them, establish a video conference using Skype.
   b. Create an Email account for yourself- Send an email with two attachments to another friend. Group the email addresses use address folder.
   c. Register for one online course through any of the online learning platforms like NPTEL, SWAYAM, Alison, Codecademy, Coursera. Create a registration form for your college campus placement through Google forms.

**Reference Books :**

2. Internet technology and Web design, ISRD group, TMH.
3. Information Technology – The breaking wave, Dennis P. Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
I Year – Semester II
2020-21 Admitted batch
PET AND ZOO ANIMALS 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 management          Geoff Hosey
3. Dictionary of zoo biology and animal management   Paul A Rees
4. Small animal care and management                  Dean Warren
PET AND ZOO ANIMALS MANAGEMENT

(Credits 2+0=2)

Model paper

Time: 2hrs                                                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  
Animal husbandry & Dairying  
I Year – Semester II  
2020-21 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. N. Gautam  
2. LIVESTOCK PRODUCTION MANAGEMENT Dr. Nilotpal Ghsoh  
3. Livestock Production Management NSR SASTRY, CK THOMAS
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.
UNIT - 1
Demographic distribution of livestock and role in Indian economy. Problems and prospects of livestock industry in India.
Common animal husbandry terms. (glossary)
Body conformation and identification.

UNIT - 2
Transportation of livestock and wild or zoo animals.
Common farm management practices including disinfection, isolation, quarantine and disposal of carcass.
Housing systems, layout and design of different buildings for animals. Selection of site.
General principles affecting the design and construction of building for housing for various livestock species

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 (Cattle, Buffalo, Sheep, Goat,) their prevention and care.
Livestock production systems. Animal holding and land holding patterns in different agro-climatic zones. Organic livestock production.

UNIT - 5
Judging and BCS for body parts of livestock. Preparation of animals for show.
Culling of animals. Selection and purchase of livestock
Methods of milking and precautions

PRACTICALS:
Visit to different animal farms and Identification of various breeds of cattle, buffalo, sheep and Goat.
Identification of common tools used on animal farm.
Familiarization with body points of animals.
Methods of identification (marking, tattooing, branding, tagging and electronic chip under pre-emptive analgesia).
Use of rope for knot and halter making.
Dentition and ageing of animals.
Preparation of animals for show and judging.
Selection and culling of animals.
Preparation of project proposal
Humane handling and restraining of cattle, buffalo, sheep and Goat.
Clipping, shearing, dipping, spraying and spotting sick animals.
Determination of body weight using different methods.
Familiarization with routine cattle, buffalo, sheep and goat farm operations.
Milking of dairy animals.
Reference books:

2. A Text Book of Livestock Production and Management Shraddha Shrivastava, V. N. Gautam
2. LIVESTOCK PRODUCTION MANAGEMENT Dr. Nilotpal Ghsoh
3. Livestock Production Management NSR SASTRY, CK THOMAS
4. Livestock Production JAVED K, INTECH
5. Livestock Production And Management Pankaj Kumar Singh, Thakur Krishna Shankar Rao
6. Advances In Livestock Production Management Sunil Kukar, Birendra Kumar Misra And Manish Kumar
ANDHRA UNIVERSITY  
B.Vocational course  
Animal husbandry & Dairying  
I Year – Semester II  
2020-21 Admitted batch  
LIVESTOCK PRODUCTION AND MANAGEMENT  
(Credits 4+2=6)  

Model paper  

Time: 3hrs  
Maximum: 75marks  

SECTION – A  

Answer any FIVE questions. Each question carries equal marks.  
(5*5 =25)  
1. Describe the procedure of humane handling and restraining of cattle, buffalo, sheep and goat.  
2. Explain in detail the procedure of large animal carcass disposal.  
3. What are the precautions to be followed while milking.  
4. Explain the disinfection procedure of dairy farm and what are the various disinfectants used.  
5. Explain the requirements, layout and design of cattle shed for 10 buffalos.  
6. Explain about the dentition and aging of livestock.  
7. What are the common vices of animals and how to prevent them.  
8. What is quarantine? Explain in detail.  

SECTION – B  

Answer All the questions. Each question carries Ten marks  
(5*10 =50)  
1. A) What are the different methods employed for determination of body weight of animal.  
(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) Describe the role of livestock in Indian economy.  
(or)  
B) What is INAPH. Explain in detail.  
5. A) Explain in detail the procedure for culling of animals.  
(or)  
B) Prepare a project report for running a dairy farm of 100 animals.
UNIT – 1

Growth of poultry industry
Classification of poultry

UNIT – 2

Scavenging system of management
Brooding management
Care and growth management
Care and management of layers
Care and management of broilers

UNIT – 3

Feeding management
Classification of nutrients – Nutrient requirements and Feeding systems
Additives and supplements. Water management.

UNIT – 4

Egg formation.
Egg structure – Physical and chemical composition.
Incubation of eggs.

UNIT – 5

Marketing of poultry and poultry products.
Health care for common poultry diseases – vaccination.
General principles of poultry medication.
PRACTICALS

- Common breeds of poultry, different classes, Indian chickens and other avian species breeds.
- Digestive and respiratory system of chicken.
- Male and female reproductive system–
- Economic traits of broilers, Layers and breeders.
- Housing and design of a poultry farm.
- Poultry farm equipment and their classification.
- Brooding arrangement in broiler farms.
- Poultry feed ingredients and its quality assessment and feed preparations.
- Fundamentals in poultry Post-mortem examination for sample collection.
- Collection and dispatch of samples for PM examination.
- Management during summer, winter and Rainy season.
- Automization in poultry farms (EC house).

Reference books:
1. Manual on Avian Production and Management Ghosh Nilotpal, IBDC
2. Practical manual of avian production and management Jadhav
3. Handbook of Poultry Production and Management M F Siddique
4. Livestock Production Management N S R sastry, C K thomas
5. Livestock Production Javed k, intech
SECTION – A

1. Describe the digestive system of chicken with diagram.
2. Indian poultry industry – give an overview.
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. What are the general preparations of poultry medication.

SECTION – B

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) Give detailed classification of poultry with respect to production characteristics.
3. A) What are the common breeds of poultry. Explain in detail.
   (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) What are the various strains/breeds developed for back yard poultry production.
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

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

Computation of selection index.

Reference books:

1. Textbook of Animal Genetics and Breeding  
   Nada Ben Abdallah
2. Text Book On Animal Genetics Breeding  
   H K B Paresh, P N
   Srivastava, B C Sarkhel
3. Animal Genetics and Breeding  
   Dr Arun Kumar Tomar, Dr Rajbeer Singh
4. Textbook Of Animal Breeding  
   Dr. S. S. Tomar
5. Animal Breeding  
   Gerald Weiner
6. Veterinary Genetics  
   F.W. Nicholas
7. Genetics of Livestock Improvement  
   John F. Lasley
8. Breeding and improvement of farm animal  
   Warwick, E.J. and Legates, J.E.
ANDHRA UNIVERSITY  
B.Vocational course  
Animal husbandry & Dairying  
I Year – Semester II  
2020-21 Admitted batch  
ANIMAL GENETICS AND BREEDING  
(Credits 4+2=6)  

Model paper  
Time: 3hrs  
Maximum: 75 marks  

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

1.  
2.  
3.  
4.  
5.  
6.  
7.  
8.  

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

1) a (or)  
b  
2) a (or)  
b  
3) a (or)  
b  
4) a (or)  
b  
5) a (or)  
b
| 3rdSem | 1. English – 3                  | Language          | 3+0=3 |
|        | 2. Organic chemistry           |                   | 3+0=3 |
|        | 3. Health and hygiene          | Life skills       | 2+0=2 |
|        | 4. Environmental education     | Life skills       | 2+0=0 |
|        | 5. Disaster management         | Skill development | 1+0=1 |
|        | 6. Basics of animal nutrition  | Core subject      | 4+2=6 |
|        | 7. Fodder production and conservation | Core subject     | 4+2=6 |
|        | 8. Veterinary public health and food safety | Core subject | 4+2=6 |
A Course in Conversational Skills

Learning Outcomes

By the end of the course the learner will be able to:

- Speak fluently in English
- Participate confidently in any social interaction
- Face any professional discourse
- Demonstrate critical thinking
- Enhance conversational skills by observing the professional interviews

I. UNIT

Speech: 1. Tryst with Destiny Jawaharlal Nehru
Skills: 2. Greetings
       : 3. Introductions

II. UNIT

Speech: 1. Yes, We Can Barack Obama
Interview: 2. A Leader Should Know How to Manage Failure Dr.A.P.J.Abdul Kalam/ India Knowledge at Wharton
Skills: 3. Requests

III. UNIT

Interview: 1. Nelson Mandela’s Interview With Larry King
Skills: 2. Asking and Giving Information
       : 3. Agreeing and Disagreeing

IV. UNIT

Interview: 1. JRD Tata’s Interview With T.N.Ninan
Skills: 2. Dialogue Building
       : 3. Giving Instructions/Directions

V. UNIT

Skills: 2. Debates
       : 3. Descriptions
       : 4. Role Play
UNIT-I
Structural theory in Organic Chemistry. Types of bond fission and organic reagents (Electrophilic, Nucleophilic, and free radical reagents including neutral molecules like H2O, NH3 & AlCl3). Bond polarization: Factors influencing the polarization of covalent bonds, electro negativity - inductive effect. Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (c) Stability of carbonium ions. Resonance or Mesomeric effect, application to (a) acidity of phenol, and (b) acidity of carboxylic acids. Hyperconjugation and its application to stability of carbonium ions, Free radicals and alkenes, carbanions, carbenes and nitrenes. Types of Organic reactions: Addition - electrophilic, nucleophilic and free radical. Substitution - electrophilic, nucleophilic and free radical. Elimination- Examples.

UNIT-II
Acyclic Hydrocarbons
Alkynes - Preparation by dehydrohalogenation of dihalides, dehalogenation of tetrahalides, Properties;

UNIT-III
Benzene and its reactivity. Concept of resonance, resonance energy. Heat of hydrogenation, heat of combustion of Benzene, mention of C-C bond lengths and orbital picture of Benzene. Concept of aromaticity - aromaticity (definition), Huckel's rule - application to Benzenoid (Benzene, Naphthalene) and Non - Benzenoid compounds (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation) Reactions - General mechanism of electrophilic substitution, mechanism
of nitration, Friedel Craft's alkylation and acylation. Orientation of aromatic substitution – Definition of ortho, para and meta directing groups. Ring activating and deactivating groups with examples (Electronic interpretation of various groups like NO2 and Phenolic). Orientation of (i) Amino, methoxy and methyl groups (ii) Carboxy, nitro, nitrile, carbonyl and sulphonic acid groups (iii) Halogens (Explanation by taking minimum of one example from each type)

UNIT – IV

Halogen compounds
Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aryl alkyl, allyl, vinyl, benzyl halides. Nucleophilic aliphatic substitution reaction- classification into $SN_1$ and $SN_2$ – reaction mechanism with examples – Ethyl chloride, t-butyl chloride.

Hydroxy compounds

UNIT-V

carbonyl compounds
Nomenclature of aliphatic and aromatic carbonyl compounds, structure of the carbonyl group. Synthesis of aldehydes from acid chlorides, synthesis of aldehydes and ketones using 1,3-dithianes, synthesis of ketones from nitriles and from carboxylic acids.


List of Reference Books

1. A Text Book of Organic Chemistry by B.S. Bahl and Arun Bahl
3. Organic chemistry by Bruice
4. Organic chemistry by Clayden
5. A Text Book of Organic Chemistry by B.S. Bahl and Arun Bahl
Model paper

Time: 2hrs        Maximum: 50marks

SECTION – A
Answer any Four questions. Each question carries five marks. (4*5 =20)
1. 
2. 
3. 
4. 
5. 
6. 
7. 

SECTION – B
Answer any three Questions. Each question carries ten marks (3*10 =30)
1. 
2. 
3. 
4. 
5. 
The course is designed to provide a complete guidance on health and hygiene systems, guidelines for implementing and role of government and public in maintaining a healthy life. At the end of the course the student shall be able to understand –

- the importance of health and hygiene in life
- the importance of nutrition for a healthy life
- different health care programmes of India
- basic concept of health impact assessment as a means of assessing the policies, plans and projects using quantitative and qualitative techniques
- importance of community and personal health & hygiene measures
- Importance of food, social tenets, mental condition, physical activity on health

**Learning Objectives:**

- To provide knowledge on different health indicators and types of hygiene methods
- To impart knowledge on different health care programmes taken up by India
- To make student understand the latest concepts of health such as HIA, EIA, SIA and SEA
- To enable student with disaster mitigation strategies
- To create awareness on community health and hygiene
- To enrich knowledge on communicable and non-communicable diseases and their control
- To aware the student on the importance of food, social strategies, mental status and physical activities on health
- To introduce different community-based mobile apps on health to student and thereby to the community
Learning / Course Outcomes: On completion of this course, the students will be able to understand –

• What is a healthy diet?
• How can we use available information to optimize our diet?
• Can nutrition be used for a healthy life?
• Is there a one-size-fits-all “good” diet or should we individualize our dietary goals?
• Disaster management and responsiveness of public in pandemic and epidemic diseases
• Assess the impact of policies on health and hygiene Health measures to consider while travelling
• Awareness in public through digital media viz., mobile apps
Unit I: Basics of Nutrition 10 Hrs.

1. Nutrition – definition, importance, Good nutrition and mal nutrition; Balanced Diet: Basics of Meal Planning
6. Macro and micro minerals – functions, effects of deficiency; food sources of Calcium, Potassium and Sodium; food sources of Iron, Iodine and Zinc

Unit II: Health 10 Hrs.

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
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)
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 


REFERENCES 


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=13 
- Village health sanitation & Nutritional committee https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=149&lid=22 
- Rogi Kalyan Samitis
- Health Impact Assessment – [https://www.who.int/hia/about/faq/en/](https://www.who.int/hia/about/faq/en/)  
  (suggested information only)
- WASH [https://www.unicef.org/wash/](https://www.unicef.org/wash/) and 
- Healthy Living [https://www.nhp.gov.in/healthylivingViewall](https://www.nhp.gov.in/healthylivingViewall)

Note: The above web links are from MoHFW, GoI. Teachers can prepare their notes from other resources also.
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester III
2020-21 Admitted batch
HEALTH AND HYGEINE
(Credits 2+0=2)

Model paper

Time: 2hrs Maximum: 50marks

SECTION – A
Answer any Four questions. Each question carries five marks. (4*5 =20)
1. 
2. 
3. 
4. 
5. 
6. 
7. 

SECTION – B
Answer any three Questions. Each question carries ten marks (3*10 =30)
1. 
2. 
3. 
4. 
5.
Course objective: A Generic Course intended to create awareness that the life of human beings is an integral part of environment and to inculcate the skills required to protect environment from all sides.

Learning outcomes: On completion of this course the students will be able to …..

1. Understand the nature, components of an ecosystem and that humans are an integral part of nature.
2. Realize the importance of environment, the goods and services of a healthy biodiversity, dependence of humans on environment.
3. Evaluate the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities.
4. Discuss the laws/acts made by government to prevent pollution, to protect biodiversity and environment as a whole.
5. Acquaint with international agreements and national movements, and realize citizen’s role in protecting environment and nature.

Unit 1: Environment and Natural Resources 06 Hrs.

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 10 Hrs.

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.
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.

Suggested activities to learner: (4 hours)
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:
  (Prepared for University Grants Commission) Universities Press.
Reference books:

Model paper

Time: 2hrs  
50marks

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

1.

2.

3.

4.

5.

6.

7.

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

1.

2.

3.

4.

5.
ANDHRA UNIVERSITY  
B.Vocational course  
Animal husbandry & Dairying  
II Year – Semester III  
2020-21 Admitted batch  
DISASTER MANAGEMENT  
(Credits 2+0=2)

Learning Outcomes:
After successful completion of the course, the students are able to;

1. Understand the nature, cause and effects of disasters
2. Comprehend the importance of Disaster Management and the need of awareness
3. Acquire knowledge on disaster preparedness, recovery/remedial measures and personal precautions
4. Volunteer in pre and post disaster management service activities

Syllabus:

UNIT-I: 06 hrs
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: 09hrs

UNIT-III – 09 hrs
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: (06 hrs)
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.
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester III
2020-21 Admitted batch
DISASTER MANAGEMENT
(Credits 2+0=2)

Model paper

Time: 2hrs        Maximum: 50marks

SECTION – A
Answer any Four questions. Each question carries five marks.            (4*5 =20)
1.
2.
3.
4.
5.
6.
7.

SECTION – B
Answer any three Questions. Each question carries ten marks          (3*10 =30)
1.
2.
3.
4.
5.
ANDHRA UNIVERSITY
Bachelor of Vocation: Animal husbandry & Dairying
II Year – Semester III
2020-21 Admitted batch
BASICS OF ANIMAL NUTRITION
(Credits 4+2=6)

UNIT – 1
Importance of Nutrition – Common Definitions in Animal Nutrition – Classification of Nutrients

UNIT – 2
Special consideration in the Nutrition of different livestock species – Ruminants – Non-ruminants – Poultry.

UNIT – 3
Proteins in Animal Nutrition – True protein and crude protein – Amino acids – Essential and Non-Essential Amino Acids – Biological values
Lipid nutrition – essential fatty acids – omega fatty acids.

UNIT – 4
Minerals in Animal Nutrition – Major minerals – Minor minerals

UNIT – 5
Compound feeds – Feed supplements – Feed Additives.

PRACTICALS
General acquittance of various equipment in Nutrition laboratory – Hot air oven – Kjeldal Digestion and Distillation Unit – Soxhlet Apparatus – Muffle furnace.
Estimation of various proximate principles in feed – Moisture – Crude protein – Ether extract – Crude fibre – Total Ash.
Estimation of Acid Insoluble Ash – Calcium – Phosphorus – Detection of common adulterants in feeds.
Feed formulation – Ration formulation – practical exercises
Visit to Cattle feed plant and Poultry feed plant.
<table>
<thead>
<tr>
<th>Reference books:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Principles of animal nutrition and feed technology</td>
</tr>
<tr>
<td>2. Principles and practices of animal nutrition</td>
</tr>
<tr>
<td>3. A textbook of animal nutrition</td>
</tr>
<tr>
<td>4. Basic animal nutrition and feeding,</td>
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<tr>
<td>5. Animal nutrition</td>
</tr>
<tr>
<td>6. Principles of animal nutrition and feeds</td>
</tr>
</tbody>
</table>
AN DHRA UNIVERSITY
A.M.A.L College, Anakapalle
Bachelor of Vocation: Animal husbandry & Dairying
II Year – Semester III
2020-21 Admitted batch
BASICS OF ANIMAL NUTRITION
(Credits 4+2=6)
Model paper

Time: 3hrs        Maximum:75marks

SECTION – A
Answer any FIVE questions. Each question carries five marks.       (5*5 =25)

1. Write about Importance of water in the Animal Body.
2. What are the functions of Calcium, its deficiency symptoms.
3. What are the blood forming minerals? Write brief about their other functions.
4. Name the essential Amino Acids.
5. Describe about Acidosis in ruminants?
6. What are the nutrients present in different proximate principles of feeds?
7. Write about difference diseases caused due to deficiency of B-Complex vitamins.
8. What are the functions of fats in the Animal Body? What are essential fatty acids?

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

1. a) Write about functions, deficiency symptoms and sources of fat-soluble vitamins.
   (or)
   b) Importance of salt in the animal diet.
2. a) Classify feed ingredients and give one example to each category.
   (or)
   b) Write about different feed processing methods
3. a) Draw a diagrammatic representation of feed plant and label them with different areas.
   (or)
   b) Describe about feeding of laying poultry.
4. a) Formulate a model ration for an adult cow weighing 400 kg BW and 8 liters milk yield with 5% fat.
   (or)
   b) What are ago industrial byproducts? Give five examples along with significance of each byproduct in animal nutrition.
5. a) Write about feeding of different categories of pigs.
   (or)
   b) Describe about different types of commercial pet foods.
Importance of grasslands and fodder in livestock production.
Agronomical Practices for fodder production.

UNIT - 2

Important leguminous and non-leguminous fodders in different seasons.

UNIT - 3

Soil and Water conservation and drainage of water for fodder production.
Fodder production for small livestock units.

UNIT - 4

Structures for storage of feeds and fodders.
Scarcity fodders and preservation of green fodder.

UNIT - 5

Recycling of animal washings and wastes in fodders production and use of recycle waste.
crop residues and their optimum utilization

PRACTICALS

Visit to the fodder farm.
Familiarization with the various types of fodders in Andhra pradesh
Familiarization with various fertilizers and manures.
Collection, preservation and storage of feed and fodder; Damages or loss during transfer and storage; methods to prevent them.
Cost of calculations of fodder production.
Livestock waste utilization and recycling.

Reference books:

1. Production Utilization and Conservation of Forage Crops A S Bimbraw
2. Fodder production and Conservation Seema Misra, Prem Pathak
3. Production Technology Of Forage And Fodder Crops Prof. Raju R A
4. A handbook for feed and fodder development Jambay Gyeltshen, Pema Wangda
ANDHRA UNIVERSITY
A.M.A.L College, Anakapalle
Bachelor of Vocation: Animal husbandry & Dairying
IIYear – Semester III
2020-21 Admitted batch
FODDER PRODUCTION AND CONSERVATION
(Credits 4+2=6)
Model paper

Time: 3hrs       Maximum: 75marks

SECTION – A
Answer any FIVE questions. Each question carries five marks.       (5*5 =25)

1. What is the importance of land preparation for fodder cultivation.
2. Write the stage of harvest of any five fodder crops.
3. What is rotational grazing? What are it's uses?
4. What are the crop residues commonly fed to animals? Why they are important?
5. Write briefly about Urea, DAP and Murate of Potash
6. Write the seed rates of any five fodder crops.
7. What are perennial fodder crops? What is their importance?
8. Write about fodder storage?

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

1. a) Describe silage making in detail.
   (OR)
   b) Give details of Maize fodder cultivation.
2. a) What are the advantages of hay making? Describe hay making methods in detail.
   (OR)
   a. Write about Urea treatment of paddy straw.
3. a) Describe Hybrid Napier cultivation.
   (OR)
   a. How to reduce fodder wastage during cultivation, harvest, transportation, storage and feeding.
4. a) Give detailed description of grassland management.
   (OR)
   a. Write detailed cultivation practices Lucerne.
5. a) Describe about manures and fertilizers used in fodder production, their application rate for Bajra crop.
   (OR)
   b) Write about chaffing and chaff cutters in detail.
ANDHRA UNIVERSITY
A.M.A.L College, Anakapalle
B.Vocational course
Animal husbandry & Dairying
II Year – Semester III
2020-21 Admitted batch

VETERINARY PUBLIC HEALTH AND FOOD SAFETY
(Credits 4+2=6)

UNIT - 1

Aims and scope of Veterinary Public Health.
Role of veterinarians in public health. One Health concept and initiatives. Veterinary
Public Health administration. Sources of contamination. Principles and concepts of
food hygiene and safety.

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:

VETERINARY PUBLIC HEALTH AND FOOD SAFETY
(Credits 4+2=6)

Model paper

Time: 3hrs       Maximum: 75marks

SECTION – A
Answer any Five of the following  (5x5 = 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 slaughterhouse 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.
<table>
<thead>
<tr>
<th>4thSem</th>
<th>1. Infectious diseases of livestock and poultry</th>
<th>Core subject</th>
<th>4+2=6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Veterinary immunology and vaccines</td>
<td>Core subject</td>
<td>4+2=6</td>
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<td></td>
<td>3. Milk and milk products technology</td>
<td>Core subject</td>
<td>4+2=6</td>
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<td></td>
<td>4. Meat production and abattoir management</td>
<td>Core subject</td>
<td>4+2=6</td>
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<td>5. Principles of Dairy chemistry and Dairy microbiology</td>
<td>Core subject</td>
<td>4+2=6</td>
</tr>
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<td></td>
<td>6. Laboratory Diagnostic Techniques</td>
<td>Core subject</td>
<td>4+2=6</td>
</tr>
</tbody>
</table>
UNIT - 1
Itiology, symptoms, diagnosis and treatment of various Viral diseases of livestock, pets and poultry

UNIT - 2
Itiology, symptoms, diagnosis and treatment of various Bacterial diseases of livestock, pets and poultry

UNIT - 3
Itiology, symptoms, diagnosis and treatment of various Parasitic diseases of livestock, pets and poultry

UNIT – 4
Itiology, symptoms, diagnosis and treatment of various Fungal diseases of livestock, pets and poultry

UNIT – 5
Itiology, symptoms, diagnosis and treatment of various Diseases caused by ectoparasites of livestock, pets and poultry

PRACTICALS
Post mortem examination of different diseases and their interpretation.
Study of gross specimens and histopathological slides of various organs pertaining to infectious and non- infectious diseases of domestic animals.
Demonstration of causative agents in tissue section by special staining methods and use of rapid diagnostic tests

BOOKS FOR REFERENCE

1. Text book of preventive veterinary medicine Dr.Amalendu chakarvarthi
2. Infectious diseases of livestock S.V. Pundit and V.V.Deshmukh
4. Advanced Pathology And Treatment Of Diseases Of Poultry C D N Singh,
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester IV
2020-21 Admitted batch
INFECTIOUS DISEASES OF LIVESTOCK AND POULTRY
(Credits 4+2=6)
Model paper

Time: 3hrs       Maximum: 75marks

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

1. Describe Etiology, Transmission, Symptoms and control of Foot and Mouth Disease.
2. Describe Etiology, Transmission, Symptoms and control of Blue tongue in sheep.
3. Write note on Ascariosis in calves.
4. Describe in detail about Trypanosmiosis (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 incross 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.  
   (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.
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester IV
VETERINARY IMMUNOLOGY AND VACCINES
(Credits 4+2=6)

UNIT - 1
History of Immunology - Lymphoid organs, tissues and Cells - Types of Immunity

UNIT - 2
Hypersensitivity: classification and mechanism of induction;

UNIT - 3
Autoimmunity; Immunotolerance

UNIT - 4
Concept of Immunity to Microbes

UNIT - 5
Vaccines-preparation , storage, safety and maintenance
Vaccination schedules of different livestock, poultry and pet animals.

Practicals
Visit and appraisal of Veterinary biological institute.
Demonstration of various livestock and pet vaccines.
To attend vaccination programmes in field and commercial poultry farms.

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  
Animal husbandry & Dairying  
II Year – Semester IV  
2020-21 Admitted batch  
VETERINARY IMMUNOLOGY AND VACCINES  
(Credits 4+2=6)  
Model paper

Time: 3hrs       Maximum: 75marks

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

1.  
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SECTION – B
Answer all questions. Each question carries TEN marks (5*10 =50)

1. a) or  
   b)  
2. a) or  
   b)  
3. a) or  
   b)  
4. a) or  
   b)  
5. a) or  
   b)
UNIT – 1
Milk industry in India, milk processing unit and its management
Composition & Nutritive value of milk
Factors effecting composition of milk
Physio-chemical properties of milk

UNIT – 2
Collection, chilling of milk
Standardisation of milk- pasteurisation, homogenisation, bactofugation, dehydration of milk

UNIT - 3
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 - 4
Packaging, transportation, storage and distribution of milk and milk products.
Good manufacturing practices and implementation of HACCP in milk plant.
Organic milk products.

UNIT - 5
Food safety standards for milk and milk products.

PRACTICALS
Visit to modern milk processing and milk products manufacturing plants.
Sampling of milk. estimation of fat, solid not fat (SNF) and total solids.
Platform tests.
Cream separation.
Detection of adulteration of milk.
Determination of efficiency of pasteurization.
Preparation of milk products like ghee, paneer or channa, khoa, ice-cream or kulfi, milk beverages.

Reference books:
1. Text Book on Milk & Milk Products Ranveer R C, Kamble D K, Patange
2. MILK AND MILK PROCESSING Herrington B.L.
3. Milk and Milk Products H. Varnam Alan
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester IV
2020-21 Admitted batch
MILK AND MILK PRODUCTS TECHNOLOGY
(Credits 4+2=6)
Model paper

Time: 3hrs       Maximum: 75marks

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

1. 
2. 
3. 
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8. 

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

1. a) or
   b) 
2. a) or
   b) 
3. a) or
   b) 
4. a) or
   b) 
5. a) or
   b)
UNIT - 1
Prospect of meat industry in India. Nutritive value of meat.

UNIT - 2
Preservation of meat and poultry; drying, salting, curing, smoking, chilling, freezing, canning, irradiation and chemicals. Ageing of meat.

UNIT - 3
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 - 4
Layout and management of rural, urban and modern abattoirs. HACCP concepts in abattoir management. FSSA standards on organization and layout of abattoirs. Animal welfare and pre-slaughter care, handling and transport of meat animals including poultry.

UNIT - 5
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:
Reference books:
3. Text Book on Abattoir Practices and Animal By Products Technology Jhari Sahoo and Manish Kumar Chatli
4. Abattoir Practices By-Products And Wool Technology V P Singh and Neelam Sachan
ANANDRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester IV
2020-21 Admitted batch
MEAT PRODUCTION AND ABATTOIR MANAGEMENT
(Credits 4+2=6)
Model paper

Time: 3hrs       Maximum: 75marks

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

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 

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

1. a) or
   b)
2. a) or
   b)
3. a) or
   b)
4. a) or
   b)
5. a) or
   b)
UNIT - 1
Nutritional importance – Introduction - Milk Composition Milk Constituents - Factors Affecting the Composition of Milk Flavours and Off- Flavours Related to Milk Nutritive Value of Milk

UNIT - 2
physio-chemical properties of milk - Objectives – Introduction - Density and Specific Gravity - Viscosity Surface - Tension - Refractive Index

UNIT - 3
Freezing Point - Boiling Point - Specific Heat - Acidity -Ph - Buffering Action Oxidation - Reduction –preservatives, neutralizers and adulterants in milk and their detection - thermal processing of milk

UNIT - 4
Heat Processing of Milk - Effect of Heat on Milk - Freeze Processing of Milk - Enzymes in Relation to Processing

UNIT – 5
Introduction to microbiology - Micro organisms found in milk – Bacteria – Virus – Fungi – significance of micro organisms in the context of dairy industry – enumeration of different types of micro organisms commonly found in milk – their growth characteristics.

PRACTICALS:
Assessing the chemical composition of milk samples.
Assessing the nutritive values of milk samples.
Enumeration of different micro organisms commonly found in milk.
Usage of pycnometer and lactometer.
Usage of refractometer.

Reference books:
Mathur M.P. Datta Roy, D, and Dinakar (1999)
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester IV
2020-21 Admitted batch
PRINCIPLES OF DAIRY CHEMISTRY AND DAIRY MICROBIOLOGY
(Credits 4+2=6)
Model paper

Time: 3hrs       Maximum: 75marks

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

1. Give the composition of cow and buffalo milk.
2. Explain in detail physio- chemical properties of milk.
3. Explain in detail about freezing point & boiling point of milk.
4. Explain how colostrum milk is different from normal milk?
5. State hydrolytic rancidity and its control.
6. Give in brief about factors affecting the composition of milk.
7. Explain about thermal processing of milk.
8. Enumerate in detail different types microorganisms found in milk.

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

1. Indicate the growth characteristic various microbes in milk.
   (or)
   Explain in detail the significance of microbes in the context of dairy industry.
2. Write in detail about freeze processing of milk & effect of enzymes on it.
   (or)
   Write the bacterial & viral contaminants of milk?
3. What is the procedure to assess the chemical composition of milk samples.
   (or)
   Explain in detail the usage of pycnometer and lactometer.
   (or)
   Explain in detail about preservatives, neutralisers and adulterants in milk.
5. What is heat processing of milk. Explain effect of heat on milk in detail.
   (or)
   Explain in detail about the density and specific gravity of milk.
UNIT - 1
Microscope and usage of different microscopes.
Sterilization and methods of sterilization.

UNIT - 2
Media – various ingredients used for preparation of culture media. Different media for bacterial and fungal cultures. Tissue cultures Various stains and dyes used for diagnostic work. Different staining methods.

UNIT - 3
Antigens and antibodies. Serodiagnostic technics used for identification of antigen/antibody.

UNIT - 4
Methods of preparation of permanent slides. Collection, preservation and despatch of various materials for parasitological examinations.

UNIT - 5
Examination of parasitic specimens. Examination of pathological specimens. Haematological examinations. Biochemical analysis.

PRACTICALS
Identification of glass ware chemicals and laboratory equipment.
Preparation of normal and standard solutions.
Samples preparation for chemical analysis.
Preparation of slides for parasitic and pathological examinations.
Staining procedures for different specimens.
Collection and processing of specimens for clinical examination.
Clinical haematology
Preparation of permanent slides and museum specimens.

Reference books:
1. Veterinary Laboratory Diagnosis Chauhan RS
2. Veterinary Laboratory Diagnosis Sriraman
3. Veterinary Technician's Handbook of Laboratory Procedures Brianne Bellwood and Melissa Andrasik Catton, John Wiley
4. Veterinary Laboratory Medicine Clinical Biochemistry and Haematology Morag G. Kerr, John Wiley
5. Veterinary clinical diagnostic technology Prasad B
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
II Year – Semester IV
2020-21 Admitted batch
LABORATORY DIAGNOSTIC TECHNIQUES
(Credits 4+2=6)
Model paper

Time: 3hrs  Maximum: 75marks

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

1.
2.
3.
4.
5.
6.
7.
8.

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

1. a) or
   b)
2. a) or
   b)
3. a) or
   b)
4. a) or
   b)
5. a) or
   b)
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<tr>
<th></th>
<th>Subject</th>
<th>Type</th>
<th>Credits</th>
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<tr>
<td>1</td>
<td>Veterinary pharmacology</td>
<td>Core</td>
<td>4+2=6</td>
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<tr>
<td>2</td>
<td>Dairy Plant Management</td>
<td>Core</td>
<td>4+2=6</td>
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<tr>
<td>3</td>
<td>Fundamentals of Veterinary medicine</td>
<td>Core</td>
<td>4+2=6</td>
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<td>4</td>
<td>Jurisprudence, animal welfare acts and ABC</td>
<td>Core</td>
<td>4+2=6</td>
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<tr>
<td>5</td>
<td>Basics of Veterinary surgery</td>
<td>Core</td>
<td>4+2=6</td>
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<tr>
<td>6</td>
<td>Veterinary Gynaecology, obstetrics and AI</td>
<td>Core</td>
<td>4+2=6</td>
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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

Reference books:

1. Veterinary Pharmacology  Vallachira
   Aravindan

2. Essentials Of Veterinary Pharmacology And Therapeutics  H S
   Sandhu
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
III Year – Semester V
2020-21 Admitted batch
VETERINARY PHARMACOLOGY
Credits(4+2)

Model paper

Time: 3hrs Maximum: 75marks

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

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

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
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

UNIT - 3

UNIT - 4

UNIT - 5
Preventive maintenance of dairy plants and machineries - Principles of Preventive Maintenance Development of Plant Maintenance Programme - Guidelines for Effective Lubrication - Care and Cleaning of SS Surface - Care of Pipes and Fittings - Maintenance of Rubber and Gaskets Dairy Building Sanitation Dairy effluent management.

PRACTICALS:
Visit to milk collection centre
Visit to milk chilling centre.
Visit to various units of dairy plant.
Hands on training in preparation of various milk products.
Handling of different dairy equipment

REFERENCE BOOKS:
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
III Year – Semester V
2020-21 Admitted batch
DAIRY PLANT MANAGEMENT
(Credits 4+2=6)
Model paper

Time: 3hrs       Maximum: 75marks

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

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

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

1. A) What are the basic equipment used in a dairy plant?  
   (or)
   B) Write various sections of a dairy plant.

2. A) Describe the differences between a separator and a clarifier.  
   (or)
   B) Explain the working of a continuous freezer.

3. A) Explain the working of spray dryer used for milk.  
   (or)
   B) Give the working of a homogenizer and explain what are the advantages of homogenization.

4. A) Explain the working of multipurpose process vat used for dahi making.  
   (or)
   B) Explain the equipment used for making ghee and khoa.

5. A) Distinguish between internal check up and major overhaul.  
   (or)
   B) Describe the importance of proper selection of dairy equipment.
UNIT – 1
History and scope of Veterinary Medicine, concept of animal diseases. Concepts of diagnosis, differential diagnosis, treatment and prognosis.

UNIT – 2
General systemic states, hyperthermia, hypothermia, fever, septicemia, toxemia, shock, allergy, anaphylaxis, oedema, coma, anaemia.

UNIT – 3
Etiology, clinical manifestations, diagnosis, differential diagnosis, treatment, prevention and control of diseases of cattle, dog, poultry.

UNIT – 4
Diseases of digestive, respiratory, cardiovascular, urinary, nervous, musculoskeletal, haemopoietic, and lymphatic systems, skin.

UNIT – 5
Diagnosis and management of diseases caused by deficiency of iron, copper, cobalt, zinc, manganese, selenium, calcium, phosphorus, magnesium, iodine, vitamin A, D, E, B complex, K and C.

PRACTICALS

Reference books:
5. Text book of clinical veterinary medicine Dr. Amalendu Chakravarthi
6. Small animal internal medicine Ettinger
7. Large animal internal medicine Bradford and Smith
8. Hand book for veterinary clinicians Dr. A. U. Bhikane and Dr. S. B. Kawitkar
9. A hand book for veterinary physician V. P. Sapre
ANDHRA UNIVERSITY
B.Vocational course
Animal husbandry & Dairying
III Year – Semester V
2020-21 Admitted batch
FUNDAMENTALS OF VETERINARY MEDICINE
(Credits 4+2=6)
Model paper

Time: 3hrs      Maximum: 75marks

SECTION – A

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

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

SECTION – B

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

1. Write a detailed note on Milk fever in cattle.
   (or)
   Write a detailed note on Post parturient haemoglobinuria in buffaloes.
2. Write a detailed note on causes of Anaemia in cattle.
   (or)
   Write a detailed note on Acid indigestion in large ruminants.
3. Write in detail about gout in poultry.
   (or)
   Write about Traumatic Reticulo Pericarditis in bovines.
4. Write a detailed note on Simple indigestion and it’s treatment in bovines.
   (or)
   Write a note on causes, Symptoms and treatment of bloat.
5. Enlist the causes and treatment of enteritis in ruminants.
   (or)
   Write about hypothyroidism in dogs and it’s treatment.
UNIT -1
Legal duties of veterinarians, laws related to medicine, evidence, common offences against animals and laws related to these offences. Examination of living and dead animals in criminal cases. Cruelty to animals and bestiality. Legal aspects of examination of animals for soundness, examination of injuries and post-mortem examination. Causes of sudden death in animals.

UNIT -2

UNIT -3

UNIT -4

UNIT -5
Assessing welfare in practice, environment enrichment, euthanasia, welfare of animals used in education and research and transportation, religion and animal welfare, Human and animal welfare conflict, veterinary disaster management, human–animal interactions, economics and animal welfare and veterinarians as animal welfare educator.

Animal birth control programme.

PRACTICALS
Visit to society for prevention of cruelty to animals, Visakhapatnam.
Animal birth control programme.
Visit to nearest livestock shandy.
Enumeration of stray cattle and dogs.
Identification of strategic locations for water troughs for stray animals.

Reference books:

1. Veterinary ethics and jurisprudence       Kirthi Dua
2. Veterinary jurisprudence                   S.N. Sharma, A.K.Gehlot, R.K.Tanwar
3. Guidelines and SOP issued by animal welfare board of India(AWBI).
ANDHRA UNIVERSITY  
B.Vocational course  
Animal husbandry & Dairying  
III Year – Semester V  
2020-21 Admitted batch  
VETERINARY JURISPRUDENCE, ANIMAL WELFARE ACTS AND  
ANIMAL BIRTH CONTROL PROGRAMME  
(Credits 4+2=6)  
Model paper  

Time: 3hrs  
Maximum: 75marks  

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

1. Enlist common causes of sudden death in livestock.  
2. Write a note on Legal duties of Veterinarian.  
3. Explain about common offences against the animals.  
4. Write a note on adulteration of milk.  
5. Write a note on adulteration of meat.  
6. Mention the common animal welfare organizations in India  
7. Write note on Bestiality  
8. Various methods of Cruelty against the animals.  

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

   (or)  
   Discuss about guideline of transportation of animals.  
2. Write about VCI act and Ethics of Veterinarian  
   (or)  
   Animal Birth control programme  
3. Write about Animal Welfare Measures to be taken in Disasters  
   (or)  
   Write in detail about procedure and guidelines of conducting post – mortem examination in vetero legal cases  
4. Write a detailed note on Cow slaughter act in India.  
   (or)  
   Write an essay on Animal welfare in research and education.  
5. Role of Veterinarian in Animal Welfare.  
   (or)  
   Write about various types of wounds in animals.
UNIT - 1
Introduction: Historical perspective, Definitions. classification of surgery.
Tenets of Halsted.

UNIT - 2
History taking, physical examination, clinico-pathological testing.
Pre-operative, intra-operative and post-operative considerations

UNIT - 3
Sterilization and disinfection: Definitions, surgical sterilization, various
methods of sterilization (Heat, chemical and radiations etc.), disinfections.

UNIT - 4
Sutures: Definitions, suturing, factors influencing suturing, characteristics of
an ideal suture material, types of suture material-absorbable and non-
absorbable, surgical knots, various suture patterns-apposition, eversion,
inversion and special.

UNIT - 5
Basic surgical affections: Definitions, classification, diagnosis and treatment
of abscess, tumour, cyst, hernia, haematoma, necrosis, gangrene, burn and
scald, frost bite and surgical affections of muscles, artery and vein, sinus and
fistula.
Fractures.
Major surgeries of cattle and dogs.

PRACTICALS
Introduction to layout of operation theatre and surgical unit.
Introduction of common surgical equipment and instruments.
Suture materials, surgical knots and suture patterns.
General examination of surgical patients. Preparation of surgical patients.
Other operation theatre routines like sterilization, preparation of theatre,
Surgeon and surgical pack.
Bandaging and basic wound management Demonstration (or Audio visual
aids) of surgery, control of haemorrhage and suturing

Reference books:
A Textbook On Veterinary Surgery and Radiology S.K NANDI
Essentials of Veterinary surgery Venugopalan S
Dollor’s Veterinary surgery Oconnor JJ
Veterinary surgery E R Frank
Veterinary Surgery Spencer A Johnston
B.Vocational course
Animal husbandry & Dairying
III Year – Semester V
2020-21 Admitted batch
BASICS OF VETERINARY SURGERY
Credits(4+2=6)

Model paper

Time: 3hrs Maximum: 75marks

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

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

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

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

UNIT - 2
Oestrous cycle and factors affecting the length of the oestrous cycle - Aberrations of oestrus and their clinical management and problems in oestrus detection and oestrus detection aids.

UNIT - 3
Pathological affections of ovary, uterine tubes, uterus, cervix, vagina and external genitalia and male genitalia.

UNIT - 4
Pregnancy diagnosis - Duration of pregnancy - Factors affecting gestation length.

UNIT - 5
Care and management of pregnant animals. Stages of parturition. Forms of female and male infertility in bovines. Artificial insemination techniques in farm and pet animals

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

Reference books:
1. Veterinary obstetrics and genital diseases Stephen J. Roberts
2. Applied veterinary gynaecology and obstetrics Dr. Pradeep Kumar
3. Veterinary reproduction and obstetrics Geoffrey H. Arthur
SECTION – A
Answer any FIVE questions. Each question carries equal marks. (5*5 = 25)

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

SECTION – B
Answer ALL the questions. Each question carries TEN marks (5*10 = 50)

1. A) Write in detail about factors effecting gestation length.
   (or)
   B) Write about technique of vaginal exfoliative cytology in bitches.

2. A) Discuss about care and management of pregnant animals.
   (or)
   B) Explain about theories of parturition (physiology) in cattle.

3. A) Discuss about estrus detection aids used for cattle.
   (or)
   B) Write about handling and maintenance of LN2 containers.

4. A) Discuss in detail regarding Impotentia generandi
   (or)
   B) Enumerate different gestational periods in different species

5. A) Discuss in detail regarding Impotentia coeundi.
   (or)
   B) Draw diagrams of different cells exposed during vaginal cytology in bitches.
1. **INTERNSHIP IN VETERINARY DISPENSARIES**: As part of field work students will be allotted to different veterinary dispensaries. They will have hands on training in respect of treatment of ailing animals, all surgical and gynaecological procedures, preventive vaccination programmes etc. They will also have acquaintance with all the calendar of operation of AH department. They will maintain case records of all the cases attended for treatment.

2. **VISAKHA DAIRY**: Students will be involved in all dairy operations from collection of milk from the villages, transportation of milk to bulk milk chilling centres, processing, packaging, distribution and in preparation various milk products. Besides they will be involved in marketing of milk and milk products.

3. **ZOOLOGICAL PARK**: In the zoological park students will be appraised on different procedures that will be adopted in relation to captive, wild and zoo animals. Various managerial and feeding practices of zoo animals will be dealt thoroughly.

4. **AVIAN HATCHERY**: Students will have exposure in operating poultry incubators and hatchers. They will also gain knowledge of various procedures that are being adopted in avian hatchery from setting of eggs in incubators to hatching of chicks.

5. **MECHANISED SLAUGHTER HOUSE**: Students will have hands on training in humane slaughter of animals. Various procedures followed in mechanised
slaughter house will be dealt thoroughly. They will have acquaintance with various machineries in mechanised slaughter house.

6. **PIG BREEDING STATION:** The breeding operations that are being followed and the problems that are encountered in pig breeding will be dealt in this component of field work. The various remedial measures that are practiced in effective pig breeding and in reducing piglet mortality will be studied thoroughly.

7. **CATTLE FEED MIXING PLANT:** Students will have exposure in formulation and preparation of various rations pertaining to livestock. They will have acquaintance with the machinery of feed mixing plant. Will acquire knowledge of procuring raw material and different feed ingredients used for preparing feed for different purposes, different species and different age groups.

8. **ANIMAL BIRTH CONTROLL PROGRAMME:** The knowledge on standard operating procedures (SOPs) as specified by the Animal welfare board of India for conducting animal birth control programme will be imparted. Students will have exposure in humane catching of stray dogs, their housing, preoperative activity, conducting birth control operation, post operative care and relocating the dogs in their original places.

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