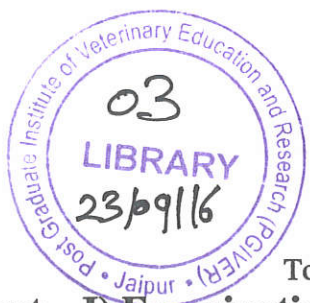


09



Total Number of pages 20

**B.V.Sc. & A.H. (Part – I) Examination – 2016  
of the Five-Year Degree Course**

**ANIMAL NUTRITION PAPER-I**

**To be filled by the candidate:**

Candidate's Roll Number:

In figure .....

In words .....

Candidate's Enrolment Number: .....

Day and date of examination: .....

Please see for general instructions overleaf.

**Signatures of invigilators verifying the details filled by the candidate**

Signature of invigilator 1: ..... 2: .....

Candidate should not write anything below this line

**Marks to be filled by the examiner:**

| Section A    |       | Section B    |       |
|--------------|-------|--------------|-------|
| Q. No.       | Marks | Q. No.       | Marks |
| 1.           |       | 6.           |       |
| 2.           |       | 7.           |       |
| 3.           |       | 8.           |       |
| 4.           |       | 9.           |       |
| 5.           |       | 10.          |       |
| <b>Total</b> |       | <b>Total</b> |       |

Total Marks obtained:

In figures: ..... In words: .....

Signature of examiner: .....

Do not write across this line

*Library copy*

**INSTRUCTIONS TO THE CANDIDATES**

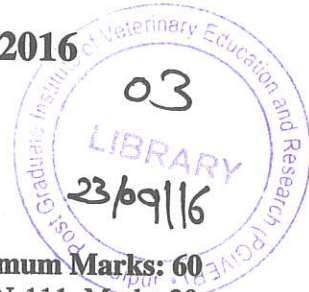
1. The invigilator and the members of the Flying Squad are empowered to take search of the examinees during the examinations.
2. Candidate should read the question paper and the instructions carefully before they begin to write answers.
3. The candidate will not be allowed to leave the examination hall before one hour from the end of the examination time.
4. Write on the cover page all the required entries correctly and get the signature of the invigilators.
5. Write legibly in the space provided for answer of each questions/sub-questions according to instruction given in the question paper booklet (question paper).
6. Do not write your name on any part of the question paper / answer booklet.
7. Do not leave examination hall without handing over question paper / answer booklet to the invigilator incharge.
8. No leaves should be torn out of the question paper / answer booklet.
9. Candidate attempting to use unfair means or talking to one another will be dealt with severely as per unfair means rules.
10. No written paper or book notes etc. should be brought to examination hall.
11. Total number of pages of question paper / answer booklet be checked before writing.
12. Candidate should not bring in any article other than pens and admit card. Use of Mobiles, calculators on any other electronic device in the examination hall is strictly prohibited.

**SPACE FOR ROUGH WORK**

| Q.No | Marks | Obtained | Total |
|------|-------|----------|-------|
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |
|      |       |          |       |

**B.V.Sc. & A.H. (Part – I) Examination – 2016  
of the Five-Year Degree Course**

**ANIMAL NUTRITION PAPER-I**



**Time: Three Hours**

**Maximum Marks: 60**

**Section A: Principles of Animal Nutrition and Feed Technology: ANN-111 Marks 30**

**Section B: Applied Animal Nutrition-I (Ruminants): ANN-121 Marks 30**

**Instructions:**

- 1) Attempt all questions
- 2) Answer of all questions is to be written in the space provided along with the question in question-booklet.
- 3) Overwriting is not allowed in the objective type question.

**SECTION – A**

**Principles of Animal Nutrition and Feed Technology: ANN-111:**

**Maximum Marks 30**

**Q.1 Fill in the blanks.**

**(9x0.5 = 4.5)**

- i) Richest source of vitamin C is \_\_\_\_\_ (fruit).
- ii) Gross energy value of carbohydrates is about \_\_\_\_\_.
- iii) Formula of Respiratory quotient is \_\_\_\_\_.
- iv) Most potent form of Vitamin 'E' is \_\_\_\_\_.
- v) Most of the food proteins contains \_\_\_\_\_ % nitrogen.
- vi) Physiological fuel value was established by \_\_\_\_\_.
- vii) Anti nutritional factor mimosine is present in \_\_\_\_\_.
- viii) Formula of net energy value of feed is \_\_\_\_\_.
- ix) TDN value of feeds indicates its \_\_\_\_\_.

**Q.2 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: (9x0.5 = 4.5)**

- i) Animal body is having the least amount of : \_\_\_\_\_ ( )
  1. Carbohydrate.
  2. Protein.
  3. Fat.
  4. None of these.

- ii) Piglet anaemia is caused by the deficiency of : ( )
1. Iodine.
  2. Iron.
  3. Zinc.
  4. Manganese.
- iii) Which of the following is an Anti haemorrhagic factor: ( )
1. Vitamin K.
  2. Vitamin C.
  3. Vitamin D.
  4. Vitamin B.
- iv) Which of the following is not a leguminous fodder: ( )
1. Berseem.
  2. Cowpea.
  3. Sorghum.
  4. Lucerne.
- v) Cobalt is used by the rumen microbes for the synthesis of : ( )
1. Vitamin B<sub>12</sub>.
  2. Vitamin C.
  3. Vitamin D.
  4. Vitamin K.
- vi) Kunitz inhibitors are found in: ( )
1. Soybean.
  2. Castor bean.
  3. Mustard cake.
  4. Mango seed kernel.
- vii) Antinutritional factor present in castor bean is: ( )
1. Gossypol.
  2. Ricin.
  3. Dhurrin.
  4. Amygdalin.
- viii) Lysocellin is an example of : ( )
1. Toxin.
  2. Antioxidant.
  3. Ionophore antibiotic.
  4. Prebiotic.
- ix) Ruminants fed high levels of easily fermentable carbohydrates without adaptation, are likely to suffer from: ( )
1. Alkalosis.
  2. Acidosis.
  3. Hydronephrosis.
  4. All of the above.

Please write Roll No. above this line \_\_\_\_\_

**Q.3 Attempt any nine out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (9x1= 9)**

i) NCFR:

-----  
-----  
-----



ii) Haylage:

-----  
-----  
-----

iii) Saponins:

-----  
-----  
-----

iv) Nutrient:

-----  
-----  
-----

v) Fat soluble vitamins:

-----  
-----  
-----

vi) Mixed hay:

-----  
-----  
-----

vii) Parturient paresis in cow:

-----  
-----  
-----

viii) Exudative diathesis:

-----  
-----  
-----

ix) Digestion:

-----  
-----  
-----

x) Ration:

-----  
-----  
-----



Donot write across this line

Please write Roll No. above this line \_\_\_\_\_

xi) Zero grazing:

-----  
-----  
-----

xii) Hatchery residue:

-----  
-----  
-----



**Q.4 Attempt any three out of the following four questions. Answer of each question should be in 5 to 8 lines. (3x2 = 6)**

i) Field curing of hay.

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----

ii) Substances interfering with metabolic utilization of proteins.

-----  
-----  
-----

Please write Roll No. above this line \_\_\_\_\_

-----  
-----  
-----  
-----  
-----

iii) Microbiological changes during silage making.

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----

iv) Complete feed block technology.

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----





Please write Roll No. above this line

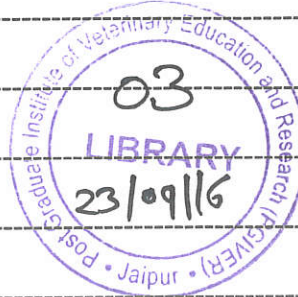
**Q.5 Answer the following question in 1-2 pages (attempt any one). (1x6 = 6)**

- i) What do you understand by conservation and preservation of forage? Discuss in detail the prerequisites, principles, methods and biochemical changes taking place in an ensiled mass.
- ii) What is "heat increment"? How the heat production in animal body is measured by indirect calorimetry?





Please write Roll No. above this line



Donot write across this line

**SECTION – B**

**Applied Animal Nutrition-I (Ruminants): ANN-121**

**Maximum Marks 30**

**Q.6 Fill in the blanks.**

**(9x0.5 = 4.5)**

- i) Two stages Karnal process is used in \_\_\_\_\_ treatment of crop residues.
- ii) Urea is added in the concentrate mixture @ \_\_\_\_\_ %.
- iii) Apparent digestibility is \_\_\_\_\_ than the true digestibility.
- iv) Nitrogen balance method is used for estimating \_\_\_\_\_ requirement.
- v) MFN excretion \_\_\_\_\_ with increased feed intake.
- vi) NRC stands for \_\_\_\_\_.
- vii) Chromic oxide is an example of \_\_\_\_\_.
- viii) Generally livestock ration should contain \_\_\_\_\_ % of salt.
- ix) General formula for basal metabolism is \_\_\_\_\_.

**Q.7 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: (9x0.5 = 4.5)**

- i) Digestible nutrient type feeding standards are based on: ( )
  1. Feed unit
  2. Digestible nutrients
  3. Net energy
  4. All of the above
- ii) Morrison feeding standards are expressed in terms of : ( )
  1. DCP
  2. TDN
  3. DM
  4. All of the above
- iii) Two stage technique (Tilley and Terry method) helps in determining: ( )
  1. *In vivo* digestibility
  2. *In vitro* digestibility
  3. *In sacco* digestibility
  4. None of the above
- iv) The example of non nutrient feed additive is: ( )
  1. Urea
  2. Molasses
  3. Mineral mixture
  4. Yeast

Donot write across this line

Please write Roll No. above this line

v) Factors considered to determine energy requirement for maintenance: ( )

1. BMR
2. Activity increment
3. Both
4. None

vi) Which is not production value type feeding standard: ( )

1. Kellner
2. ARC
3. Armsby
4. NRC.

vii) With the advancement of maturity the digestibility of forages: ( )

1. Increases
2. Decreases
3. No change
4. None of the above

viii) Scandinavian feed unit standards were given by the scientist: ( )

1. Fjord
2. Thaer
3. Sen and Ray
4. N. D. Kehar

ix) In Zebu cattle, 1 kg concentrate is required for every: ( )

1. 2.0 kg milk production
2. 2.5 kg milk production
3. 3.0 kg milk production
4. 3.5 kg milk production

**Q.8 Attempt any nine out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (9x1= 9)**

i) Browsing:

-----  
-----  
-----

Please write Roll No. above this line \_\_\_\_\_

ii) Creep ration:

-----  
-----  
-----

iii) Fasting catabolism:

-----  
-----  
-----

iv) Digestibility:

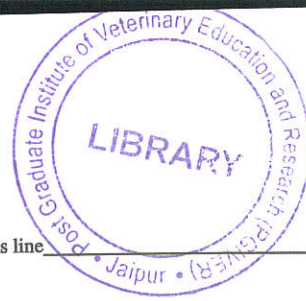
-----  
-----  
-----

v) Metabolism trial:

-----  
-----  
-----

vi) Hay standards:

-----  
-----  
-----



Please write Roll No. above this line

vii) Maintenance:

-----  
-----  
-----

viii) Isocaloric diet:

-----  
-----  
-----

ix) UMMB:

-----  
-----  
-----

x) Enlist various methods of preparation of concentrate mixture.

-----  
-----  
-----

xi) Synthetic markers:

-----  
-----  
-----

Please write Roll No. above this line

xii) RDP and UDP:

-----  
-----  
-----

**Q.9 Attempt any three out of the following four questions. Answer of each question should be in 5 to 8 lines. (3x2 = 6)**

i) *In sacco* technique of digestibility determination.

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----

ii) Characteristics of good indicators/markers.

-----  
-----  
-----  
-----  
-----  
-----



Please write Roll No. above this line

iii) Thumb rule method of ration formulation.



iv) Care to be taken while feeding urea to ruminants.

Donot write across this line

\_\_\_\_\_ Please write Roll No. above this line \_\_\_\_\_

**Q.10 Answer the following question in 1-2 pages (attempt any one). (1x6 = 6)**

- i) Write down the feeding schedule of calves from birth to 6 months of age.
- ii) What is the importance of scientific feeding? Enlist various feeding experiment and describe any two in detail.

Please write Roll No. above this line \_\_\_\_\_

Q. No. ....



Donot write across this line

A series of horizontal dashed lines for writing the answer to the question.

Please write Roll No. above this line



Do not write across this line