B. V. Sc. & A.H. (Second Professional) Examination – 2024
Animal Nutrition Paper -I

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-1 (Principles of Animal Nutrition and Feed Technology)
Unit-2 (Applied Ruminant Nutrition-I)

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.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 Gross energy (Kcal/g) content of carbohydrates is about _____.

1.2 Vitamin _____ is known as Pellagra preventing factor.

1.3 Daily water requirement of sheep and goat is _____.

1.4 Stringy wool in sheep is caused due to the deficiency of _____.

1.5 Antinutritional factor gossypol is present in _____.

1.6 _____ devised a method called proximate analysis in 1965.

1.7 Portion of ME used for work, growth & milk production is called _____.

1.8 Average water content of a new born calf is _____.

1.9 Acerola cherry is the richest fruit source of vitamin _____.

1.10 First animal calorimeter was developed by _____.

1.11 Loss of pigment during hay making is known as _____.

1.12 _____ is the most potent form of Aflatoxin.

1.13 CLFMA stands for _____.

1.14 Ideal Ca:P ratio in the diet of animals should be _____.

Donot write across this line

1.15 Gross energy value of feeds is measured by instrument known as _____.

1.16 Best crop for hay making is _____.

1.17 The average nitrogen content of protein is _____.

1.18 Anti-nutritional factor present in Subabul is _____.

1.19 The general formula for basal metabolism is _____.

1.20 Feed unit was used in _____ feeding standard

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: **(20x0.5 = 10)**

2.1 Animal body is having the least amount of ( )
1. Carbohydrate
2. Protein
3. Fat
4. None of these

2.2 Polyneuritis in birds is caused by the deficiency of ( )
1. Cyanocobalamine
2. Riboflavin
3. Thiamine
4. Pyridoxine

2.3 Fructo-oligosaccharide (FOS) is an example of ( )
1. Prebiotic
2. Probiotic
3. Synbiotic
4. Yeast

2.4 Oil seed cakes are used as a rich source of ( )
1. Energy
2. Minerals
3. Protein
4. Vitamins

2.5 The molybdenum toxicity is exhibited as ( )
1. Blind staggers
2. Teartness
3. Xerophthalmia
4. Pica

2.6 Amount of metabolic water produced from proteins is ( )
1. 60%
2. 40%
3. 100%
4. 110%

Donot write across this line

2.7 Higher intake of lush Berseem results into ( )
1. Constipation
2. Bloat
3. Calculi
4. Bleeding

2.8 Vitamin not synthesized in cows is ( )
1. Vitamin A
2. Vitamin B1
3. Vitamin C
4. Vitamin B12

2.9 Which one is the wet processing method for feeds ( )
1. Popping
2. Chaffing
3. Roasting
4. Pressure cooking

2.10 Physiological fuel value of carbohydrates is ( )
1. 6.0
2. 9.0
3. 4.0
4. 5.65

2.11 Which is not a production value type feeding standard ( )
1. Kellner feeding standard
2. ARC feeding standard
3. NRC feeding standard
4. Armsby feeding standard

2.12 The moisture content in hay should not be more than ( )
1. 15%
2. 30%
3. 25%
4. 10%

2.13 pH of very good silage ranges between ( )
1. 3.0-3.4
2. 3.5-4.2
3. 4.2-4.5
4. 4.5-4.8

2.14 Daily water requirement of a dairy cow is influenced by ( )
1. Composition of ration
2. Environmental temperature
3. Milk production
4. All of the above

2.15 If total N intake is less than total N outgo then animal is in ( )
1. Negative nitrogen balance
2. Positive nitrogen balance
3. Nitrogen Equilibrium
4. None of the above

2.16 Cobalt is used by the rumen microbes for the synthesis of ( )
1. Vitamin C
2. Vitamin B12
3. Vitamin K
4. Vitamin D

2.17 Which of the following is not a leguminous fodder? ( )
1. Berseem
2. Cowpea
3. Lucerne
4. Sorghum

2.18 Ratio of digestible protein to the sum of digestible carbohydrates and fat is called as ( )
1. Total digestible nutrients
2. Nutritive ratio
3. Net protein retention
4. Biological value

2.19 Which is not an example of Ionophore antibiotics ( )
1. Monensin
2. Salinomycin
3. Lysocellin
4. Penicillin

2.20 Popping of grains is done by ( )
1. Dry heat
2. Wet heat
3. Both of the above
4. None of the abo

Q.3 Attempt any ten out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Balanced Ration

3.2 Agro-industrial by products

3.3 Haecker's feeding standards

3.4 Heat increment

3.5 Biological value

3.6 Maintenance type fodder

3.7 Complete feed blocks

3.8 Chemical score

3.9 Pelleting

3.10 Leaching of hay

3.11 Protein efficiency ratio

3.12 Starch equivalent

Q.4 Attempt any <u>six</u> out of the following eight questions. Answer of each question should be in 8 to 10 lines. (6 x 6.0 = 36)

4.1 Differentiate the fat soluble and water soluble vitamins

4.2 General functions of minerals.

4.3 Challenge feeding

4.4 Saponins as feed additive

4.5 Indirect calorimetry

4.6 Nitrate poisoning in livestock

4.7 Classify roughage based on its nutritive value.

4.8 Probiotics as feed additive.

Q.5 Answer the following question in 1-2 pages (attempt any two).

(2x12.0 = 24)

5.1 Enlist various methods of roughage processing. Write in detail about nutritional characteristics and urea treatment of poor quality crop residues

5.2 (a) Define digestibility 2.0

(b) Enlist various methods of digestibility determination and write In vitro method in detail 6.0

(c) Factors affecting the digestibility of feed 4.0

5.3 What is silage? Write down prerequisites, crops suitable, method, advantages and disadvantages of silage making.

B. V. Sc. & A.H. (Second Professional) Examination – 2024
Animal Nutrition Paper -II

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-3 (Appliced Ruminant Nutrition-II)
Unit-4 (Applied Non-Ruminant Nutrition)

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.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 The DM intake in lactating goats is ..... % of body weight.

1.2 Sen and Ray feeding standard is based on ..... feeding standard.

1.3 Urea is added in the concentrate mixture at a level of..... %.

1.4 Zinc deficiency in pigs may caused ..... .

1.5 The calf starter is fed to the calf from age of ..... days.

1.6 The temperature of rumen liquor various from .....to ..... oC.

1.7 Caecotrophy begins in the young rabbit at about .....weeks of age.

1.8 Most common disease of horse due to faulty feeding managements is ..... .

1.9 Rabbits are categorized as ..... fermenter.

1.10 ..... is the preferred unit of energy for calculating the requirements in pets.

1.11 Reference standard in a Bomb calorimeter is .....

1.12 Adult Guinea pig consumes diet at the rate of ..... % of B.W.

1.13 The adult pig diet may contain .....% fibre.

1.14 Energy requirements of broiler starter bird are ..... ME Kcal/kg diet.

1.15 ..... is a methyl donor used in swine as a feed additive.

1.16 Minimum value of fasting catabolism is known as.....

1.17 The DM intake in crossbred cattle is ..... % of body weight.

1.18 Cats require free amino acid ..... in the diet.

Do not write across this line

1.19 Butyric acid produced in the rumen is converted to ..... during absorption across the ruminal walls.

1.20 Vitamin C is dietary essential for.....

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: (20x0.5 = 10)

2.1 Fibre degeneration in large intestine of pig produces: ( )
1. protein.
2. fat.
3. carbohydrates.
4. VFA.

2.2 Which of the following amino acid is most important for wool formation:( )
1. Lysine.
2. Leucine.
3. Arginine.
4. Cysteine.

2.3 CP, % by weight (Min) requirement for laboratory rats is (as per BIS): ( )
1. 24 %.
2. 22 %.
3. 20 %.
4. 18 %.

2.4 Fermentation in Ceacum of rabbit produces: ( )
1. Microbial protein.
2. VFA.
3. Vitamin-B complex.
4. All of the above.

2.5 Perosis in poultry is caused due to deficiency of: ( )
1. Magnesium.
2. Choline.
3. Copper.
4. All.

2.6 CP requirements (%) of broiler pre starter in their diets is (BIS, 2007):( )
1. 23 %.
2. 22 %.
3. 20 %.
4. 18 %.

2.7 In the poultry feed fish meal may be added up to: ( )
1. 10 %.
2. 15 %.
3. 20 %.
4. 5 %.

2.8 Salt content of BIS specification for mineral mixture should be....Min. ( )
1. 18 %.
2. 20 %.
3. 22 %.
4. 24 %

Donot write across this line

2.9 The VFA diverted towards milk fat synthesis in ruminants is: ( )
1. Acetic acid.
2. Propionic acid.
3. Butyric acid.
4. None.

2.10 Which of the following can be used as antioxidants feed additive: ( )
1. Tocopherols.
2. Ascorbic Acid.
3. Carotenes.
4. All.

2.11 Serum calcium levels of cow with subclinical hypocalcemia ( )
1. 7.5 mg/dL
2. 8.4 to 10.4 mg/dL
3. 2 mg/dL
4. None of these

2.12 Post-partum hemoglobinuria associated with ---------- ( )
1. Hypocalcaemia
2. Hypochloremia
3. Hypomagnesemia
4. Hypophosphatemia

2.13 Most limiting amino acid in soybean based poultry diets is: ( )
1. Lysine.
2. Methionine.
3. Arginine.
4. Tryptophan.

2.14 Sub clinical Ketosis is influenced by the plasma cut point of ____ ( )
1. Propionic acid
2. Butyric acid
3. BHBA
4. Acetic acid

2.15 For fatty acid synthesis, Acetyl CoA comes from mitochondria to cytoplasm as ( )
1. Carnitine
2. Malate
3. Citrate
4. Oxaloacetate

2.16 Rate limiting enzyme in cholesterol biosynthesis ( )
1. α 1-4 glucosidase
2. HMG CoA reductase
3. Squalene synthetase
4. 7 α hydroxylase

2.17 Which of the following is dietary essential in obligate carnivore animal? ( )
1. Cysteine
2. Vitamin A
3. Stearic Acid
4. All

2.18 Rabbits are able to tolerate upto .....% crude fibre in the diet ( )

1. 5
2. 10
3. 15
4. 20

2.19 Genetically the commercials in chicken are: ( )

1. Single hybrid
2. Double hybrid
3. F_1 offsprings
4. F_3 hybrid

2.20 Efficiency of conversion of ß carotene to vitamin A is in the order ( )

1. Rat>Ruminants> Pig> Poultry
2. Rat>Poultry>Pig>Ruminants
3. Rat>Poultry>Ruminants>Pig
4. Pig>Poultry>Ruminants>Rat

Q.3 Attempt any <u>ten</u> out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Use of NPN compounds in ruminants

3.2 Flushing

3.3 Calf starter

Donot write across this line

3.4 Obligate carnivores

3.5 Hind gut fermenter

3.6 Fasting catabolism

3.7 Essential amino acids for poultry

3.8 Azoturia

3.9 Rumen filling effect

3.10 Dietary cation anion balance and milk fever

3.11 Pregnancy toxaemia in ewes

3.12 Piglet anaemia

Q.4 Attempt any six out of the following eight questions. Answer of each question should be in 8 to 10 lines. **(6 x 6.0 = 36)**

4.1 Nutrient requirements of broiler birds as per BIS, 2007

4.2 Total mixed ration.

4.3 Write about feeding a calf from birth to three month of age

4.4 Methods adopted for arriving energy requirements for maintenance in cattle.

4.5 Explain in detail the feeding of race horses.

4.6 Peculiarity of cat nutrition

4.7 Bypass nutrients in feeding of high yielding animals

4.8 Ketosis and its management

Q.5 Answer the following question in 1-2 pages (attempt any two).

(2x12.0 = 24)

5.1 Describe the methods of protein protection from rumen degradation.

5.2 Feeding habits of goat and feeding schedule for a kid from birth to 90 days.

5.3 Explain in detail about the ration formulation in dairy cattle with suitable examples.