B.V.Sc. & A.H. (Second Professional) Examination – 2025
Animal Nutrition Paper –I
(MSVE 2016)

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 _____ is the principal end product of protein catabolism in mammals.

1.2 Concept of starch equivalent was given by _____.

1.3 _____ mineral is required for thyroxine formation.

1.4 Black tongue in dogs occurs due to deficiency of _____.

1.5 A combination of probiotics and prebiotics is called _____.

1.6 Non-maintenance type of roughage have below_____% DCP.

1.7 _____ have 9 Kcal/g physiological fuel value.

1.8 Crude protein = _____ x 6.25.

1.9 Soaking is _____ type of method of improving the nutritive value of poor quality roughages.

1.10 The loss due to shattering of leaves occurs during making of _____.

1.11 Exposure of the green plant to sun rays decrease _____content of the hay.

1.12 A toxic amino acid present in subabul green forage is _____.

1.13 In purified diet method, glucose is an example of _____.

1.14 _____ of a feedstuff is defined as the portion of feed or of any single nutrient of feed which is not recovered in faeces.

1.15 Lignin and silica are _____type of marker used in digestion trial.

1.16 Antiscorbutic vitamin is_____ vitamin.

1.17 Poisoning of _____ is also referred as plumbism.

1.18 Heat production measured directly with the help of calorimeter known as _____ calorimetry.

1.19 Cleanout will be more efficient in _____ type of feed mixer.

1.20 Bleeding disease caused by deficiency of vitamin _____.

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 Father of the science of nutrition ( )
1. Nathan Zuntz
2. Antoine Lavoisier
3. Santario Sanctorius
4. Wilbur Olin Atwater

2.2 Feeds containing about 10% water are also known as ( )
1. Succulent feed
2. High moisture feed
3. Air dry feeds
4. Silage

2.3 The mineral associated with Vitamin B_{12} is ( )
1. Copper
2. Sodium
3. Selenium
4. Cobalt

2.4 Which of the following vitamin is a natural antioxidant ( )
1. C
2. K
3. B
4. D

2.5 _____ is a non-nutrient feed additive. ( )
1. Minerals
2. Vitamins
3. Hormones
4. Amino acids

2.6 NRC stands for ( )
1. National Research Centre
2. National Research Council
3. Nutritional Research Centre
4. Nutritional Research Council

2.7 Feed contains _____crude fibre are consider as roughage. ( )
1. 01-02 %
2. 04-06 %
3. 11-12 %
4. 18-19 %

2.8 1 Kilo calorie is equal to_____ KJ. ( )
1. 4.001
2. 4.184
3. 4.298
4. 4.347

2.9 Rubner's factor for protein is _____ Kcal/g. ( )
1. 1.2
2. 4.1
3. 7.3
4. 9.8

2.10 _____ is a process of particle size reduction. ( )
1. Micronizing
2. Roasting
3. Popping
4. Grinding

2.11 The moisture content of hay should be ( )
1. 12-14%
2. 20-25%
3. 70-75%
4. 80-85%

2.12 Method of hay making include ( )
1. Field curing
2. Mow curing
3. Artificial drying
4. All of the above

2.13 Oat hay poisoning is also known as ( )
1. Tannin poisoning
2. Nitrate poisoning
3. Saponin poisoning
4. Gossypol poisoning

2.14 The feeds offered to an animal during the period of 24 hours is ( )
1. Food
2. Nutrient
3. Ration
4. Balanced ration

2.15 When the digestibility is expressed in percentage, it is known as ( )
1. Digestibility trial
2. NR
3. TDN
4. Digestible coefficient

2.16 An ideal indicator used in digestibility studies should be ( )
1. Indigestible
2. Absorbable
3. Digestible
4. Pharmacologically active

2.17 The other name of Vitamin B_{12} is ( )

1. Niacin
2. Cyanocobalamin
3. Pantothenic acid
4. Pyridoxine

2.18 Metabolic water produced by 1g of fat ( )

1. 1.07g
2. 0.56g
3. 0.40g
4. 0.29g

2.19 Fluorosis is a condition caused by drinking water containing equal to or more than ____of fluorine ( )

1. 0.007ppm
2. 0.06ppm
3. 0.3ppm
4. 8.0ppm

2.20 Water content of plant _____ as the seed matures ( )

1. Increase
2. Decrease
3. Remain unchanged
4. None of the above

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 Objective of animal nutrition

3.2 Essential amino acids

3.3 Proximate principles

3.4 Vitamins

3.5 Feed supplements

3.6 Advantages of feed classification

3.7 Protein efficiency ratio

3.8 Concentrates

3.9 Adulterants

3.10 Associative effect of feeds

3.11 Biological value

3.12 Germfree technique

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 Factor that affect the chemical composition of the forage.

4.2 Describe vitamin A in brief.

4.3 Define probiotics and describe the characteristics of good probiotics.

4.4 Saponins.

4.5 Detergent method of forage analysis.

4.6 Norms adopted in conducting digestion and metabolism trials.

4.7 Factors governing the water requirements of livestock and poultry.

4.8 Reasons for processing of feeds and forages.

Q.5 Answer the following question in 1-2 pages (attempt any two). (2x12.0 = 24)

5.1 Describe in detail about calcium and phosphorus

5.2 What is silage? Describe types of fermentation occurs during silage making and classify silage in various categories based on quality.

5.3 Describe in detail about conventional partitioning of energy

Please write your Roll Number above this line

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Animal Nutrition Paper –II
(MSVE 2016)

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

Unit-3 (Applied 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 Ratio of CO_2 expired and O_2 inspired is called as.....

1.2 Avidin is an antinutritional factor for biotin which is present in.....

1.3 MFN stands for.....

1.4 Big head disease in horse is also known as.....

1.5 Site of microbial fermentation in horses is.....

1.6 Carbon and nitrogen balance technique is used for the determination of.....

1.7 Among non-ruminants, caecum and colon are longest in.....

1.8 Oyester shell grit is a source of.....

1.9 Laminitis is a condition found in which animal.....

1.10 Iron dextran injection is given to prevent .....in pigs.

1.11 Ducks possess cylindrical.....

1.12 Main organ of prehension in poultry is .....

1.13 Entire stomach of guinea pig is lined with ..... epithelium.

1.14 Curled toe paralysis in poultry is due to the deficiency of.....

1.15 Adult rat can eat ..... gm of feed per day.

1.16 Fish meal can be included up to .....% of ration in poultry

1.17 Nitrogen is excreted in poultry in the form of.....

1.18 The concept of starch equivalent was given by.....

1.19 Depigmentation of hair/wool in animals is caused by deficiency of.....

1.20 NRC is now referred as.....

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 Which of the animal practices coprophagy ( )
1. Rabbit
2. Rat
3. Fowl
4. All of these

2.2 In chicks the number of essential amino acids required are ( )
1. 8
2. 10
3. 11
4. 13

2.3 Which one is not a NPN substance ( )
1. SDPD
2. Urea
3. Silk worm pupae meal
4. Poultry litter

2.4 Cotton seed meal is not recommended for feeding in ( )
1. Cattle
2. Sheep
3. Pig
4. Goat

2.5 Most potent form of aflatoxin is ( )
1. B1
2. B2
3. G1
4. G2

2.6 Digestibility of roughages in rabbits as compared to ruminants is ( )
1. Lower
2. Higher
3. Equal
4. None of the above

2.7 Fatty liver kidney syndrome in young broiler is due to deficiency of( )
1. Vitamin
2. Mangenese
3. Riboflavin
4. Biotin

2.8 Enzyme required for digestion of phytate phosphorus is ( )
1. Cellulase
2. Maltase
3. Phosphase
4. Phytase

2.9 Bowed leg condition in ducks occurs due to the deficiency of ( )
1. Pantothanic acid
2. Vitamin A
3. Niacin
4. Any of the above

2.10 Energy requirement for maintenance of mouse is ( )
1. 150 Kcal/$Kg^{0.75}$ b.wt.
2. 160 Kcal/$Kg^{0.75}$ b.wt.
3. 140 Kcal/$Kg^{0.75}$ b.wt.
4. 180 Kcal/$Kg^{0.75}$ b.wt.

2.11 Factors considered to determine energy requirement for maintenance( )
1. BMR
2. Activity increment
3. Both
4. None

2.12 Thin shelled egg or shell less egg may be caused due to ( )
1. Low temperature
2. Low calcium diet
3. Low fibre diet
4. All of the above

2.13 Protein requirement for maintenance can be estimated by ( )
1. Feeding trial method
2. Factorial method
3. Nitrogen balance method
4. All of the above

2.14 Horse is a ( )
1. Monogastric animal
2. Herbivore animal
3. Hindgut fermenter
4. All of the above

2.15 Which one is the comparative type feeding standard ( )
1. Morrison feeding standard.
2. Hay standard
3. Kellner's feeding standard
4. Wolff's feeding standard

2.16 Nutritional roup in poultry is manifestation of the deficiency of ( )
1. Vitamin K
2. Vitamin D
3. Vitamin A
4. Vitamin E

( )

2.17 Sloth bear is

1. Carnivore
2. Omnivore
3. Herbivore
4. Piscivore ( )

2.18 Monensin is toxic to

1. Cattle
2. Poultry
3. Sheep
4. Horse

2.19 For milk production in Zebu cattle 1 kg concentrate is required for every ( )

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

2.20 Vitamin C is dietary essential for cats because of lack of the enzyme( )

1. Cysteine dioxygenase
2. l-gulonolactone oxidase
3. β-Glucuronidase
4. Glucokinase

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 Advantages of pellet feeding

3.2 Dietary allowance

3.3 Types of commercial dog foods

3.4 Differentiate the soft faeces and hard faeces of rabbit

3.5 Grazers vs browsers

3.6 Purified ingredient diet

3.7 Taurine deficiency in cats

3.8 Cannibalism in poultry

3.9 Feeding of guinea pigs

3.10 Nutrient requirement of rat

3.11 Hatchery residue

3.12 By pass protein

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 Importance of feeding colostrum

4.2 Strategies for feeding of high yielding dairy animals

4.3 Factors to be considered in ration formulation

4.4 Feed supplements used in non-ruminants

4.5 Salient features of cat's nutrition

4.6 Describe in detail feeding habits and food pattern of wild animals

4.7 Different methods of preparation of concentrate mixture

4.8 Feeding schedule of calves up to 6 months

Q.5 Answer the following question in 1-2 pages (attempt any two). (2x12.0 = 24)

5.1 Discuss nutrient requirement of equine. Write in detail feeding of horses for maintenance and growth.

5.2 Discuss in detail the various types of diets for laboratory animals and significance of carbohydrate, protein, lipids, vitamin and minerals in diet of laboratory animals.

5.3 Discuss in detail the nutrient requirement of various categories of poultry and explain the various methods of feeding poultry.