

Subject: Animal Nutrition

1. Which value from feeding standard must be used for ration formulation?
 - a. Nutrient composition
 - b. Nutrient requirement
 - c. Nutrient allowance
 - d. Nutrient deficiency

2. Scandinavian feed unit system uses which feedstuff as a feed unit
 - a. Barley
 - b. Wheat
 - c. Corn
 - d. All of the above

3. Which of these feedstuffs is not recommended as a component of milk replacer?
 - a. Groundnut cake
 - b. Maize grain
 - c. Wheat bran
 - d. Cottonseed cake

4. Optimum development of rumen ecosystem in calves requires feeding of:
 - a. Milk replacer
 - b. Colostrum
 - c. Straw
 - d. Calf starter

5. Allantoin is a
 - a. Rumen metabolite
 - b. Purine derivative
 - c. Anti-nutritional factor
 - d. Synthetic amino acid

6. CSIRO feeding standards are from
 - a. USA
 - b. UK
 - c. Australia
 - d. Sweden

7. Defaunation increases
 - a. Protozoa
 - b. Fungus
 - c. Methanogenic bacteria
 - d. Bacterial protein flow to intestine

8. Depigmentation of coloured hair and wool is a common finding in deficiency of which mineral?
 - a. Iron
 - b. Copper
 - c. Zinc
 - d. Magnesium

9. Nitrogen: sulphur ratio for proper utilization of urea in ruminants' ration should be
- 1: 10
 - 10: 1
 - 1: 100
 - 100: 1
10. Normal pH of the rumen is
- 7.8
 - 5.5
 - 6.7
 - 8.7
11. Offering extra allowance of concentrate mixture during early lactation to cow is called
- Calf replacer
 - Challenge feeding
 - Steaming up
 - Flushing
12. Urea can be incorporated in cow ration on DM basis up to
- 1.0%
 - 2.0%
 - 3.0%
 - 4.0%
13. Which of the following processes is NOT used to prepare bypass protein
- Condensed tannins treatment
 - Formalin treatment
 - Calcium salts treatment
 - Heat treatment
14. Bacterial dry matter in rumen contains about
- 200 g nitrogen/kg
 - 100 mg nitrogen/kg
 - 200 mg nitrogen/kg
 - 100 g nitrogen/kg
15. As per BIS Type I specification, the calcium % in mineral mixture for cattle is
- 18% minimum
 - 18% maximum
 - 23% minimum
 - 23% maximum
16. Which of these is true, if a cow has not received green fodder in last weeks of pregnancy
- Newborn calves must receive vitamin A supplementation
 - Cattle must receive vitamin A supplementation
 - Newborn calves must receive carotene supplementation
 - Newborn calves must receive green fodder

17. The composition of calf starter must be
- 16% CP and 60% TDN
 - 12% CP and 75% TDN
 - 23% CP and 75% TDN
 - 30% CP and 85% TDN
18. The portion of nitrogen absorbed which is retained by the animal is known as
- Biological value
 - Protein efficiency ratio
 - Gross protein value
 - Digestible crude protein
19. Teartness in ruminants occurs due to
- Molybdenum deficiency
 - Copper deficiency
 - Molybdenum toxicity
 - Copper toxicity
20. Which of the following has no physiological role in the cattle
- Selenium
 - Barium
 - Fluorine
 - Boron
21. Which of the following minerals are not interrelated
- Calcium-Phosphorus
 - Selenium-Sulphur
 - Calcium-Zinc
 - Iodine-iron
22. Urine energy in case of ruminants is about
- 10-15% of GE
 - 4-5% of GE
 - 2-3% of GE
 - 8-10% of GE
23. Efficiency of ME utilization in cattle is lowest for
- Milk production
 - Maintenance
 - Fattening
 - Growth
24. Milk protein on an average contains about
- 15.7% Nitrogen
 - 16.0% Nitrogen
 - 16.5% Nitrogen
 - 17.1% Nitrogen

25. Least cost ration formulation uses the technique of
- Linear programming
 - Chi-square technique
 - Least squaring technique
 - Binomial method
26. Immunoglobulins from colostrum are absorbed in intestines by the process of
- Passive absorption
 - Enzymatic absorption
 - Pinocytosis
 - Adsorption
27. Which of the following incriminating factors are ineffective in ruminants
- Lectins
 - Nitrate
 - Oxalates
 - Tannins
28. Production of which VFA in rumen releases relatively less amount of hydrogen
- Acetate
 - Propionate
 - Butyrate
 - Valerate
29. Which of the following is first limiting amino acid for wool growth
- Methionine
 - Lysine
 - Threonine
 - Leucine
30. Feeding behavior of goats is
- Browsing
 - Shearing
 - Grazing
 - Nibbling
31. True digestibility of microbial crude protein in ruminants is about
- 65%
 - 75%
 - 85%
 - 95%
32. 'Redgut' is a syndrome seen in sheep grazing on
- Maize fodder
 - Lucern
 - Oat fodder
 - Paddy straw

33. 'S-methylcysteinesulphoxide', an unusual amino-acid toxic for ruminants is present in
- Lucern
 - Brassica
 - Subabool
 - Soybean
34. Fat Corrected Milk (kg) yield at 4% FCM is calculated as
- 0.4 (kg milk) + 15 (kg fat)
 - 0.4 (kg fat) + 15 (kg milk)
 - 0.6 (kg milk) + 15 (kg fat)
 - 0.6 (kg fat) + 15 (kg milk)
35. Which one of the following vitamins is not present in colostrum
- Vitamin A
 - Vitamin C
 - Vitamin D
 - Vitamin E
36. First Indian feeding standards for dairy cattle were based on
- NRC values
 - AFRC values
 - Morrison values
 - Wolff-Lehmann values
37. Heat increment is a part of NEm when environmental temperature is
- Above thermoneutral zone
 - Below thermoneutral zone
 - In thermoneutral zone
 - Not measured
38. Which of the following diets will depress milk fat content in ruminants
- Tree leaves containing feed
 - Low protein diets
 - High molasses inclusion
 - Low roughage diets
39. Oat hay poisoning in cattle is also known as
- Nitrate poisoning
 - Molybdenum toxicity
 - Cyanide poisoning
 - Oxalic acid poisoning
40. Mimosine toxicity mainly affects
- Skin
 - Adrenal gland
 - Thyroid gland
 - Rumen papillae

41. Unsaturated fats in ruminant diets
- Bypass the rumen
 - Absorbed in rumen
 - Gets saturated in rumen
 - Remains insoluble in rumen
42. Split muzzle is seen in
- Goats
 - Buffaloes
 - Sheep
 - Cows
43. Order of salt tolerance is
- Sheep>cattle>pig
 - Cattle>sheep>pig
 - Pig> sheep>cattle
 - Cattle>pig> sheep
44. Zeralenone is a
- Defaunating agent
 - Un-naturalaminoacid
 - Ionophore
 - Mycotoxin
45. Cereal grains are mostly deficient in which mineral?
- Mg
 - P
 - Ca
 - K
46. Goose stepping condition in pigs is caused due to deficiency of
- Pantothenic acid
 - Choline
 - Niacin
 - Cholecalciferol
47. Optimum level of following fatty acid in layer ration is crucial in determining egg size
- Arachidonic acid
 - Linoleic acid
 - Oleic acid
 - Linolenic acid
48. In sacco method of digestibility estimation uses bags made of
- Paper
 - Cotton
 - Nylon
 - Polyethylene

49. Lathyrism is caused by
- Lucern
 - Grass pea
 - Fish meal
 - Castor bean
50. Lignin present in a sample can be broken down by using
- Alkali
 - Polar solvents
 - Oxidizing agents
 - Weak acids
51. Organochlorine pesticide residues are estimated in feedstuffs by using
- HPLC
 - GLC
 - TLC
 - Spectroscopy
52. Chocolate brown coloration of blood is associated with
- HCN poisoning
 - Oxalate poisoning
 - Nitrate poisoning
 - Glucosinolates poisoning
53. Artefact lignin is the another name given to
- NPN
 - ADIN
 - ADF
 - NDF
54. Black tongue in dogs is caused by the deficiency of
- Selenium
 - Niacin
 - Ascorbic acid
 - Riboflavin
55. By determining the heat of combustion of the faeces and subtracting the value from GE intake, one obtains
- Apparent DE
 - ME
 - True DE
 - NE
56. Maximum concentration of which immunoglobulin is present in colostrum?
- IgA
 - IgM
 - IgG
 - IgE

57. Kernal feeding standard are meant for which livestock species
- Ruminants
 - Pigs
 - Poultry
 - Equine
58. Latest ICAR feeding standards for Indian livestock species were given in the year
- 2009
 - 2013
 - 2019
 - 2023
59. HPLC is
- High pressure liquid chromatography
 - High performance liquid chromatography
 - High pressure linear chromatography
 - High performance linear chromatography
60. Degree of unsaturation of fat can be determined by
- Iodine number
 - Saponification number
 - Reichert-Meissl number
 - Calcium saturation
61. Diameter of micelles produced in the intestine during fat digestion is
- 50 – 100 Å
 - 500 – 1000 Å
 - 0.5 – 1 Å
 - 5000 – 10000 Å
62. Diets made with the most elemental ingredients available, such as individual amino acids, specific sugars etc. are known as
- Purified diet
 - Chemically defined diet
 - Natural ingredient diet
 - Balanced diet
63. Gall bladder is absent in
- Rabbits
 - Poultry
 - Horses
 - Pigs
64. Glutathione peroxidase contains
- Copper
 - Chromium
 - Selenium
 - Manganese

65. Gross energy value of CH₄ is
- 213 Kcal/mole
 - 253 Kcal/mole
 - 192 Kcal/mole
 - 133 Kcal/mole
66. Increase in energy expenditure with food intake corresponds to
- BMR
 - SDA
 - PER
 - PAR
67. Nutritional secondary parathyroidism occurs when the diet contains
- High Calcium and high phosphorus
 - Low Calcium and low phosphorus
 - High Calcium and low phosphorus
 - Low Calcium and high phosphorus
68. Oil seed meal containing lowest percentage of fat is produced by
- Expeller
 - Ghani pressing
 - Solvent extraction
 - Hammer milling
69. One calorie is equal to
- 0.293 Joule
 - 4.184 Joule
 - 4.4 Joule
 - 0.394 Joule
70. Phylloquinone, Menaquinone and Menadione are forms of
- B-vitamins
 - Carotenoids
 - Vitamin E
 - Vitamin K
71. First limiting amino acid in most of the cereal grains is
- Methionine
 - Arginine
 - Histidine
 - Lysine
72. Niacin can be synthesized in the body from the amino acid
- Threonine
 - Tyrosine
 - Tryptophan
 - Arginine

73. Which of the following is a productive type of feeding standard
- Starch equivalent
 - Wolff Lehmann
 - Savage
 - Haecker
74. The 2,6-diaminopamepic acid is a marker for
- Gossypol
 - Mycotoxin
 - Microbial protein
 - Digestibility determination of pasture
75. The generally used standard source of protein for calculation of Chemical score is
- Casein
 - Egg
 - Soybean
 - Fish
76. Thomas-Mitchell equation is used to calculate
- PER
 - NPR
 - BV
 - Chemical score
77. Tannins are
- Polyphenols
 - Glycoproteins
 - Saponins
 - Esterified glycol
78. Axenic animals mean
- Gnotobiotic animals
 - Aged animals
 - Weaned animals
 - Food deprived animals
79. Flame photometry is used to estimate
- Phenols
 - Soluble sugars
 - Minerals
 - Green house gases
80. Which of the following glassware should not be dried in hot air oven
- Beaker
 - Test-tube
 - Volumetric flask
 - Kjeldahl flask

81. Lambert Beer law find its application in
- Colorimetry
 - Electrophoresis
 - Centrifugation
 - In vitro* gas production
82. Procedure of calcium estimation in feedstuffs uses precipitation of calcium in acid solution as
- Calcium sulphate
 - Calcium oxalate
 - Calcium dichromate
 - Calcium phosphate
83. The effect of decrease in peNDF concentration in diet is manifested as
- Reduced milk yield
 - Reduced dry matter intake
 - Reduced milk-fat percentage
 - Increased milk yield
84. Rumen protozoa were first observed by
- Hungate
 - Orpin
 - Nehring
 - Gruby and Delafond
85. Pore size of bag used for digestibility estimation through *in sacco* technique is
- 40-60 μm
 - 80-100 μm
 - 5-10 μm
 - 1-2 μm
86. Which of these is NOT a hemicellulose degrading enzyme?
- Xylanase
 - Glycosyl transferase
 - exo- β -glucanase
 - Arabinase
87. Which of these is NOT a fiber degrader?
- Streptococcus caprinus*
 - Ruminococcus flavefacians*
 - Ruminococcus albus*
 - Fibrobacter succinogenes*
88. Which of these is not produced in rumen?
- Caproic acid
 - Phytic acid
 - 2-methylbutyrate acid
 - Iso-valeric acid

89. Rumen archaea are
- Obligate anaerobe
 - Facultative anaerobe
 - Facultative aerobe
 - Obligate aerobe
90. Which of these is a wrong pairing?
- Polycentric-Neocallimastix
 - Monocentric-Piromyces
 - Polycentric-Orpinomyces
 - Monocentric-Caecomyces
91. GreenFeed is
- Feed additive
 - Methane estimation method
 - Coloured concentrate pelleted feed
 - Environment safe feeding program
92. 18s rRNA sequencing in rumen contents is used for study of
- Fungi
 - Protozoa
 - Bacteria
 - Bacteriophage
93. Sudden increase in soluble carbohydrates in horse's ration may cause
- Ketosis
 - Tympany
 - Obesity
 - Laminitis
94. Calcium utilization in layer chickens is impaired by the excess of
- Magnesium
 - Sodium
 - Chloride
 - Iron
95. Fatty liver and kidney syndrome in young broiler occur due to deficiency of
- Vitamin D
 - Xanthophyll
 - Biotin
 - Carotene
96. Increased cerebro-spinal fluid pressure is a sensitive marker of
- Vitamin A deficiency
 - Vitamin E deficiency
 - Vitamin K deficiency
 - Vitamin D deficiency

97. Which of the following is a symptom in milk fever
- Fever
 - Alopecia
 - Tetany
 - Hyper-excitability
98. Flushing is
- Feeding for maximum production
 - Feeding for foetal growth
 - Feeding for better ovulation
 - Feeding for maximum growth
99. Assertion: Immunoglobulins in colostrum are not digested by calves.
Reason: Colostrum contain trypsin inhibitors.
- Assertion is correct, Reason is incorrect.
 - Assertion is false, Reason is correct.
 - Both assertion and reason are correct.
 - Both are correct but Reason is not the correct explanation of Assertion.
100. Pseudo rumination is another term for
- Pre-ruminant calves
 - Caecotrophy
 - 3-chambered stomach
 - Creep feeding
101. Beneficial by-products of microbial degradation supplemented as a feed additive are known as
- Prebiotics
 - Probiotics
 - Postbiotics
 - Ionophores
102. Carnitine is a
- Feed additive
 - Rumen metabolite
 - Kidney function marker
 - Purine derivative
103. Fish meal is a protein supplement used in the ration of
- Equine
 - Swine
 - Camel
 - Buffaloes
104. Ruminal acidosis increases the relative population of which rumen microbes
- Gram-positive bacteria
 - Gram-negative bacteria
 - Ciliated protozoa
 - Polycentric fungi

105. Recycling of ammonia in rumen involves
- Kidney
 - Large intestine
 - Saliva
 - Caecotrophy
106. Cornell Net Carbohydrate Protein System (CNCPS) differentiates protein into how many fractions?
- 2
 - 3
 - 4
 - 5
107. Low value of residual feed intake (RFI) is indicative of
- High palatability of feed
 - High feed efficiency of animal
 - Low palatability of feed
 - Low feed efficiency of animal
108. Milk urea nitrogen level can be used to predict
- Milk yield of the animal
 - Milk fat percentage
 - Rumen microbial protein production
 - Calorie protein balance in ration
109. TDN calculations adjust the energy content of feed for energy lost in
- Combustible gases
 - Urine
 - Heat of nutrient metabolism
 - Heat of fermentation
110. Deficiency of which of the following nutrients causes central retinal degeneration in felines?
- Arginine
 - Taurine
 - Niacin
 - Vitamin A
111. Which of the following is a pro-oxidant enzyme?
- Xanthine oxidase
 - Superoxide dismutase
 - Catalase
 - Glutathione peroxidase
112. Urine of rabbit is 'cloudy' due to the presence of
- Calcium salts
 - Microbial protein
 - Fatty acids
 - Uric acid

113. Which of the following food items is toxic for dogs?
- Barley
 - Onion
 - Sweet potatoes
 - Soybean
114. 'Conditioning' step in pellet making procedure involves
- Mixing of mash with steam
 - Cooling of pellets after densification
 - Addition of molasses to the mash
 - Mixing of pre-mix to other ingredients
115. Efficiency of metabolizable energy utilization is represented by the letter
- 'm'
 - 'e'
 - 'w'
 - 'k'
116. Curing produces
- Hay
 - Silage
 - Straw
 - Crumbles
117. Open circuit respiration apparatus was first proposed by
- Lavoisier
 - Pettenkofer
 - Regnault and Reiset
 - Rubner
118. Respiratory quotient higher than 1 indicates
- Fasting
 - Fattening
 - Hibernation
 - Muscle growth
119. Which of the following wavelength is near infra-red wavelength
- 200 nm
 - 600 nm
 - 1000 nm
 - 4000 nm
120. Holmen tester, Khal tester, KSU tumbling are all methods of evaluating
- Feed digestibility
 - Silage quality
 - Pellet quality
 - Feed safety

1.	C
2.	D
3.	D
4.	D
5.	B
6.	C
7.	D
8.	B
9.	B
10.	C
11.	B
12.	A
13.	C
14.	D
15.	A
16.	A
17.	C
18.	A
19.	C
20.	B
21.	D
22.	B
23.	C
24.	A
25.	A
26.	C
27.	A
28.	B
29.	A
30.	A

31.	C
32.	B
33.	B
34.	A
35.	B
36.	C
37.	B
38.	D
39.	A
40.	C
41.	C
42.	C
43.	A
44.	D
45.	C
46.	A
47.	B
48.	C
49.	B
50.	C
51.	B
52.	C
53.	B
54.	B
55.	A
56.	C
57.	A
58.	B
59.	B
60.	A

61.	A
62.	B
63.	C
64.	C
65.	A
66.	B
67.	D
68.	C
69.	B
70.	D
71.	D
72.	C
73.	A
74.	C
75.	B
76.	C
77.	A
78.	A
79.	C
80.	C
81.	A
82.	B
83.	C
84.	D
85.	A
86.	B
87.	A
88.	B
89.	A
90.	A

91.	B
92.	B
93.	D
94.	A
95.	C
96.	A
97.	C
98.	C
99.	C
100.	B
101.	C
102.	A
103.	B
104.	A
105.	C
106.	D
107.	B
108.	D
109.	B
110.	B
111.	A
112.	A
113.	B
114.	A
115.	D
116.	A
117.	B
118.	B
119.	C
120.	C