

Group 1: Choose the correct answer (12.5 degrees, 0.5 degree / point):

- 1 Zenker's degeneration of skeletal muscle fiber is a common deficiency symptom for vitamin**
a. A b. B1 c. B2 d. E
- 2 Measuring of protein quality for ruminant animals is done by**
a. gross protein value b. protein equivalent c. BV d. protein efficiency ratio
- 3 The protein efficiency ratio simply defined as**
a. each EAA content of the feedstuff determined and expressed as the percentage of standard feedstuff b. direct measure of the proportion of the feed protein which can be utilized by the animal c. the weight gain of an animal is divided by protein intake in specific time d. all the previous
- 4 Vitamin B3 deficiency could be prevented by supplementation of**
a. threonine b. alanine c. methionine d. tryptophan
- 5 Water of the animal body is determined by equation if you know -----%**
a. DM b. protein c. ash d. Lipids
- 6 Pound water is considerable part of water requirements obtained from**
a. metabolism of nutrients b. drinking c. intake of water from feedstuffs d. all the previous
- 7 Water soluble vitamins are needed to be supplied on a regular basis in the diet due to**
a. generally not stored in the body b. slowly absorbed c. rapidly excreted d. none of the previous
- 8 Crumble of equine hoof is a deficiency symptom for**
a. choline b. thiamine c. pantothenic acid d. biotin
- 9 All of these can be treated by both of vitamin E and selenium except**
a. muscular dystrophy b. exudative diathesis c- encephalomalacia d. none of the previous
- 10 Water in normal condition is related to**
a. feed intake b. high temperature c. high level of protein in the diet d. high level of salt in the diet
- 11 From the method used for protection of dietary proteins from rumen degradation is**
a-Chemically using formaldehyde b. moist heating c. chemically using NaOH d. all of the previous

- 12 Xerophthalmia is an advanced stage of eye symptoms due to**
- a. deficiency of antioxidant vitamins b. deficiency of anti-infection vitamins c. deficiency of anti-rachitic vitamins d. deficiency of vitamin E
- 13 Urea can be included in rations for ruminants at the rate of**
- a. 3% of DM content b. 30 g / Kg diet c. 33% of N content of the diet d. one third of the diet protein
- 14. Osteoporosis may be occurred due to**
- a. nephritis b. enteritis c. meningitis d. none of the previous
- 15 Sweat clover disease of cattle is associated with**
- a. vitamin k deficiency b. low prothrombin in blood c. presence of dicumarol compound in spoiled clover d. all of the previous
- 16 If animal is fed urea, supplementation of sulfur may be desired to maintain N:S ratio between**
- a. 1: 10 to 1: 15 b. 1: 20 to 1: 30 c. 1: 10 to 1: 5 d. none of the previous
- 17 Fate of rumen microorganisms**
- a. pass alive to the intestine b. death by true stomach acidity and excretion with feces c. death by true stomach acidity and complete digestion and absorption d. none of the previous
- 18 High producing dairy cows cannot meet all their protein needs from that supplied by the microbes as**
- a. the digestibility of bacterial protein is low b. it is low in BV c. about 20 % of bacterial protein comprises non digestible nucleic acid and excreted d. protein of silage must be added as a low cost undegradable protein source
- 19 From the methods of protein evaluation in dog is**
- a. essential AA index b. BV c. protein efficiency ratio d. all the previous
- 20 For poultry the vitamin D2 has the following potency in relation to vitamin D3**
- a. about 35 fold the potency of vitamin D3 b. about 25 fold the potency of vitamin D3 c. about 35 folds less than the potency of vitamin D3 d. none of the previous
- 21 The metabolic active form of vitamin D in live body is**
- a. 25 hydroxy cholecalciferol b. 1, 25 hydroxy cholecalciferol c. 1, 25 di-hydroxy cholecalciferol d. – all of the previous
- 22 Retinol is important in prevention of**
- a. deafness of newly born b. enzootic ataxia in calves c. encephalomalacia of newly born d. none of the previous
- 23 Deficiency of cobalt in mature ruminants may cause deficiency of**
- a. cyanocobalamin b. nitrocobalamin c. hydroxycobalamin d - all of the above

- 24 **Appearance of thiamin deficiency symptoms may be due absence of the prosthetic group**
a. TPP b. TDP c. TMP d-all the previous
- 25 **In the chicks, deficiency of riboflavin causes**
a. polyneuritis b- curled toe paralysis c. ataxia d. none of the previous

Group 2: A. Put \checkmark or \times on the followings (7.5 marks, 0.5 each):

1. Acetate, propionate and butyrate are not represented in NDSC ()
2. Volatile fatty acids in corn silage are available to ruminal microbes ()
3. Cows can't digest the pectin that escape the rumen fermentation ()
4. Omega 6 fatty acids have pro-inflammatory effects ()
5. C18:1 is mostly beneficial in early lactation to reduce the negative energy balance ()
6. Carbohydrate A1 fraction is organic acids ()
7. Starch in corn grains is available to cow and rumen microbes ()
8. Sources of omega 6 fatty acids are linseed and whole cotton seed ()
9. Omega 3 fatty acids have anti-inflammatory effects ()
10. ADF includes cellulose and hemicelluloses ()
11. NSP includes cellulose, hemicelluloses, pectins, beta-glucans, fructans and galactans ()
12. Carbohydrate fraction B1 is starch ()
13. The essential fatty acids are oleic and linoleic ()
14. NDF includes pectin, cellulose and hemicelluloses ()
15. Excessive unsaturated fatty acids in cow diets reduce milk fat ()

B. Give reasons for the following (5 marks, 1 each):

- 1. High dietary potassium is a risk factor for hypocalcemia and hypomagnesemia**
- 2. Hemoglobinuria is associated with phosphorus deficiency**
- 3. Sudden death is associated with copper or selenium deficiency**
- 4. Infertility is associated with iron and manganese deficiency**
- 5. Zinc, manganese, copper and selenium act as antioxidants**

Good luck

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