University of Salahaddin

College of Agricultural

Engineering sciences

Dept. Animal Resources

Subject: Ruminant nutrition

Stage: third

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Question bank

Q/ Define the following terms:

Nutrition, Food, Nutrient, Nutrigenomics, Metabolic water, Bound water, peptides,

Fibrous protein

Q/ Mention advantages of ruminants?

Q/ Mention disadvantages of ruminants?

Q/ Illustrate diagram of the main components of foods, plants and animals.

Q/ Mention the protein Functions?

Q/ what is the mechanism of protein degradation?

Q/ count the water functions.

Q/ Mention the water sources of animals.

Q/ Mention factors affecting water requirement.

Q/ write about the principles of ruminant nutrition.

Q/ Mention carbohydrates function in animal nutrition.

Q/ Explain volatile fatty acid production in rumen.

Q/ Explain important polysaccharides in animal nutrition.

Q/ what are the breakdown stages of carbohydrates in the rumen?

Q/ Describe digestion and metabolism of carbohydrates in the rumen with a diagram.

Q/ Describe digestion and metabolism of nitrogenous compounds in the rumen with a diagram.

Q/ write about the Sources of rumen nitrogen.

Q/ Briefly classify proteins.

Q/ Explained Conjugated Proteins.

Q/Answer the following question (count only)

1- Sources of water.

2- Volatile fatty acid production in rumen.

3- Main classes of carbohydrates.

4- Types of amino Acids

5- Types of fibrous proteins

6-Types of Globular Proteins

7-Types of Conjugated Proteins

Q/ Fill the following blanks:

1- The material that, after ingestion by animals, is capable of being digested, absorbed and utilized is…….but those components capable of being utilised by animals are described as……...

2- The dry matter (DM) of foods is conveniently divided into ……and ……..material.

3- The difference between plants and animals is that, whereas the cell walls of plants consist of carbohydrate material, mainly……, the walls of animal cells are composed almost entirely of …….and……..

4- The organic acids occur as fermentation products in the rumen, or in silage include……, ……, …….and……...

5- An important difference between plants and animals is that the plant can synthesize all …….for metabolism, but animals …….. .

6- The major inorganic components of animals are ……and……, whereas ……and ……are the main inorganic elements in plants.

7- Peptides are built up from amino acids by peptide linkage, ……..has been produced from two amino acids. Large numbers of amino acids can be joined together to produce…….. .

8- The greater part (and sometimes all) of the protein reaching the ruminant's small intestine will be …….and the lesser part will be ……..food protein.

9- Monosaccharaide is the simplest form of carbohydrates such as ……but disaccharides gives two monosaccharide units on hydrolysis such as……., ……..and.....

10- Sucrose (found in most plants, cane and beet sugar) which hydrolyses into two molecules of ……. and……..

11- Fibrous Proteins: These proteins are insoluble and very resistant to animal digestive enzymes. They are as follows……., ……. and……..

12- Globular Proteins includes all the enzymes, antigens and hormones that are protein like……., ……., …….. and…….

13-Water metabolism It includes ……,…….and …….

Q/A/ Indicate whether each statement is true (T) or false (F). Then correct the false statements.

1- Nutrigenomics are effects of nutrients on gene expression.

2- Water is an essential constituent of almost all the juices and secretion of the body.

3- Metabolic water it is the water, which is produced due to metabolism of nutrients. It meets 50 % of water requirement in hibernating animals

4- High fibrous diet decreases water requirement.

5- The walls of animal cells are composed almost entirely of lipid and protein.

6- Lactose (milk sugar) which hydrolyses into two molecules of glucose and fructose.

7- Cellulose is a principal constituent of the cell wall of animals.

8- Endogenous (recycled) Nitrogen includes Saliva nitrogen only.

9- The organic acids occur as fermentation products in the rumen, or in silage, are Acetic, propionic, butyric and lactic acids.

10- Soluble carbohydrates include hard fibrous substance like crude fiber, cellulose and lignin.

11- Ruminants are not competitive to humans.

12- Loss of carbon through gas production (CO_2 and CH_4) is advantage of Ruminants.

13- Conversion of high quality dietary protein to microbial protein may result in decrease in biological value of the protein.

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