



(The exam is composed of 5 pages)

Answer all the following questions:

First Question: (10 Marks)

Put the words (or phrases) in the correct order and write the statements.

1. is / of / gland / Goiter / an enlargement / the thyroid
2. are / hormones / All / proteins / and / enzymes / many
3. of / are / the / Amino acids / building / proteins / blocks
4. for / necessary / chemical / Nutrients / are / substances / life
5. for / poultry / energy / the / principal / sources / Carbohydrates / are
6. enzyme / catalysts / Minerals / in / act / as / functions / and / hormonal
7. are / components / cell membranes / functional / Fats / structural and / of
8. is / Cellulose / feedstuffs / the fibrous / a major component of / portion / of
9. is / wasteful / The use / protein / as / for / a source of / the bird /energy / of
10. is / stored in / Starch / cereal grains / a polysaccharide / and / seeds / tubers

Answer to the First Question:

1.
2.
3.
4.
5.
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7.
8.
9.
10.

Second Question (10 Marks, evenly distributed):

Write the suitable checkmark (✓ or ×) before each of the following statements:

- () Ventriculus is the glandular stomach in poultry.
- () Plant feed ingredients are deficient in Ca and P.
- () Minerals can be synthesized within the animal body.
- () Unlike mammals, birds have no lips or teeth.
- () All hormones and many enzymes are proteins.
- () Methionine is a precursor for biosynthesis of cystine.
- () Growing birds need more dietary Ca than do laying hens.
- () Heat stress negatively affects the performance of poultry.
- () Poultry can tolerate water deprivation more than starvation.
- () About 66% of P present in plant feedstuffs is unavailable to poultry.

Third Question (10 Marks, evenly distributed):

Write the scientific terms corresponding to the following phrases or definitions:

1. An unsaturated fatty acid that is considered dietary essential for poultry.
2. A measure of the solidification temperature of fat.
3. The inorganic constituents of feeds and body tissues.
4. A polymer of glucose that can be digested by poultry.
5. A polymer of glucose that cannot be digested by poultry.
6. A group of micronutrients that can be stored in body fat and released when needed.
7. The amount of feed required to produce the unit weight of product (meat or eggs).
8. Two relatively long blind tubes present at the point of ileo-colonic junction in poultry.
9. The process by which the food is broken down into absorbable nutrients.
10. A water-soluble vitamin that poultry can synthesize it in adequate amounts under normal conditions.

The Answer to the Third Question:

1.
2.
3.
4.
5.
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7.
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9.
10.

Fourth Question (10 Marks, evenly distributed):

Underline the correct answer in brackets to complete the following sentences.

1. The provision, to cells and organism, of the materials necessary to support life is known as (Nutrients / Nutrition / Vitamins).
2. The organic compounds required in minute amounts for normal growth, production, reproduction, and health of an organism are referred to as (Proteins / Minerals / Vitamins).
3. The biologically and physiologically required amino acids by poultry include (Essential amino acids / Semi-essential amino acids / All amino acids).
4. are important components of nucleic acids (Fats / Proteins / Ribose and deoxyribose).
5. Vegetable oils are rich in ... (Unsaturated fatty acids / Free fatty acids / Cholesterol).
6. Soybean meal, sunflower meal and cotton seed meal are examples of (Plant proteins / Animal proteins / Synthetic proteins).
7. are amino acids that can be synthesized in sufficient amounts by animals and therefore they are not necessary to be added in the diet. (Non-essential amino acids / Essential amino acids / Semi-essential amino acids).
8. Minerals required in small amounts by the animal are called (Macro-minerals / Micro-minerals / Pollutants).
9. The requirements of poultry for major minerals are usually expressed as (% of the diet / mg/kg / kcal/kg).
10. represents about 73% of the water required by the bird. (Metabolic water / Drinking water / Moisture present in feed ingredients).

Fifth Question (20 Marks, evenly distributed):

Discuss briefly only two of the following topics:

1. Factors affecting voluntary feed intake in poultry.
2. Factors affecting water intake in poultry.
3. Protein digestion in poultry.

The Answer to the Fifth Question:

1. Factors affecting voluntary feed intake in poultry:

[illegible]

2. Factors affecting water intake in poultry:

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Examiners:

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