POULTRY NUTRITION

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**Q1: Answer the following questions (40 marks)**

1. Effect of increasing or decreasing mineral content of the diet on the bird.
2. What are the function of vitamin D ? And what are the negative effect of deficiency
3. What are the conditions that requirement vitamins must be increased in poultry diet?
4. What are the factors that influence water consumption? Count only five and explain shortly.

**Q2: Fill the following blanks with the suitable words? (10 marks)**

1. Poultry diets can include certain constituents not classified as nutrients, such as ………, ……., and ………
2. CHOs are classified to Hydrolyzed CHOs such as ….. and …… and Un- hydrolyzed CHOs such as …….. .
3. As temperature increases above the upper critical limit of the bird’s zone of comfort, …….. is initiated.
4. The main sources of water loss in birds body are…….. and …… .
5. Birds fed with pellets resulted in ……. litter moisture than the fines or mash groups.

**Q3: Check the following questions and place (T) for the true and (F) for false statements? (10 marks)**

1. When the inefficiency is partial and interacts with some diseases the diagnoses will be difficult attribute to malnutrition or infections or toxicity.
2. With low temperature the metabolizable energy requirement will reduce.
3. Minerals that needed in relatively large amounts are referred to as trace minerals or micro-minerals.
4. Most of the P presents in serials and legumes are found as phytic acid.
5. Usually Chickens consume approximately two times food as much as water.

**Q4: Give the reasons to the following questions? (20 marks)**

1. The diet of birds should be in small amount, concentrated, easy to digest and high in feeding value.
2. Vitamin C is not required in outdoor birds but should be given to the chicken when reared in poultry house under stressed conditions?
3. Controlling bacterial load is much more difficult with open drinker systems.
4. As temperature increases above the upper critical limit of the bird’s zone of comfort, heat stress is initiated.

**Q5: Define the following terms? (20 marks)**

Poultry feed 2) Anti-nutritional factors 3)Vitamins 4) Probiotics

**Answer**

**Q1: Answer the following questions (40 marks)**

**1.Effect of increasing or decreasing mineral content of the diet on the bird**

1.Reduction of the growth

2.Leanness (atrophy) of muscle

3. Reduction in the egg production

4. Deterioration of the egg shell

5. Increases mortality

**2. What are the function of vitamin D ? And what are the negative effect of deficiency.**

Vitamin D is required for Proper absorption and utilization of calcium and phosphorous, which are required for

1. Normal growth

2. Bone development

3. Eggshell formation.

Deficiency leads to rickets.

1. Birds produce thin shell eggs

2. Reduced hatchability

3. Show leg weakness and penguin like sitting posture.

4. The beak, claws and ribs become very pliable.

**3.** **The requirement of vitamins increase in certain conditions like**

1. Transportation of chicks from the hatchery to the poultry house
2. Before the vaccination and after that
3. At the infections (illness) of the bird
4. After antibiotic administration in which affect the micro flora in the intestine
5. When the temperature is high or at high density of birds (both cause stress to the bird)
6. At high rate of production (eggs or rapid growth).
7. At the illness accord by the vitamin deficiency in the diet.

**4. What are the factors that influence water consumption count only five and explain shortly?**

**Answer/** The main factors that influence water consumption count are:

**1. Age:** Water intake is closely linked to feed intake and bird age (growth response). As the bird gets older, the demand for water will increase

**2. Sex:** The sex of the bird will also affect water intake. The water intake of males will be greater than that of females from the first week of life.

**3. Environmental temperature** can impact heavily on water intake. A chicken’s water intake will increase by 6-7% for each degree above 21°C.

**4. Water temperature** can also influence water consumption. Stored water will be at a temperature similar to that of its environment. In cold climates this is not significant, but in hot climates water intake may be reduced due to an increase in water temperature.

**5. Feed Effect on Water Intake:** Any nutrient that promotes mineral excretion through the kidneys also promotes increased water consumption.

**Q2: Fill the following blanks with the suitable words? (20 marks)**

1. Poultry diets can include certain constituents not classified as nutrients, such as xanthophylls, unidentified growth factors, and antimicrobial agents.
2. CHOs are classified to Hydrolyzed CHOs such as Sugars and Starch and Un- hydrolyzed CHOs such as Crude fiber (cellulose and hemicellulose and lignin
3. As temperature increases above the upper critical limit of the bird’s zone of comfort, heat stress is initiated.
4. The main sources of water loss are Respiration, and Excretion of feces and urine.
5. Birds fed with pellets resulted in higher litter moisture than the fines or mash groups.

**Q3: Check the following questions and place (T) for the true and (F) for false statements? (20 marks)**

1. **T**
2. **F**
3. **F**
4. **T**
5. **F**

**Q4: Give the reasons to the following questions? (20 marks)**

1. **The diet of birds should be in small amount, concentrated, easy to digest and high in feeding value.**

**Because**

1. The bird hasn't teeth.The grinding of the feed particles happen in the gizzard.

2. The gastro intestinal tract (GIT) small with small capacity

3. The feed pass quickly through the GIT (3-8h)

4. The time of diet exposure to the GIT secrets (Hcl, bile salt and enzymes) is too short.

1. **Vitamin C is not required in outdoor birds but should be given to the chicken when reared in poultry house under stressed conditions;** this is attributed to that the Vit.C syntheses in the body under stress conditions is low therefore supplementation in the feed or in water will be necessary.
2. **Controlling bacterial load is much more difficult with open drinker systems** as they are exposed to contamination by fecal dust and the oral and nasal secretions of birds as they drink.
3. **As temperature increases above the upper critical limit of the bird’s zone of comfort, heat stress is initiated.** Answer/ Because in avian species, sweat glands are lacking and feathering limits heat loss.

**Q5: Define the following terms? (20 marks)**

1. **Poultry feed:** Is food for farm poultry, including chickens, ducks, geese and other domestic birds. Feed for poultry mostly consists of grain.
2. **Anti-nutritional factors** are those compounds found in the diet which inhibit the optimum utilization from the nutrients.
3. **Vitamins** are defined as a group of complex organic compounds, they belong to the micronutrients and are required for normal metabolism in animals and required in different concentrates in the feed.
4. **Probiotics** are live bacteria that can be found in yogurt and other fermented foods.