**An Najah National University**

**Faculty of agriculture**

**Feeds and Feeding**

**Exam 2**

**April 8, 2010**

**Instructor: Professor J. ABO OMAR**

**Name:**

**Multiple choice: 1 point each**

1. What is grass tetany?
	1. niacin deficiency
	2. thiamin deficiency
	3. magnesium deficiency
	4. iron deficiency
2. What is the major mineral that is associated with pica?
	1. calcium
	2. sodium
	3. phosphorous
	4. potassium
3. What metabolite is used to synthesize vitamin D3 when human skin is exposed to ultraviolet light?
	1. serotonin
	2. thiamin
	3. cholesterol
	4. phenylalanine
4. Which of the following nutrients act to prevent oxidation and free radical damage?
	1. carotenoids, vitamin E
	2. vitamins A and D
	3. niacin, vitamin K
	4. vitamins D and E
5. What is the most biologically active form of vitamin E called?
	1. β-menaquinone
	2. fibrinogen
	3. α-tocopherol
	4. phylloquinone
6. Which vitamin is needed to make NAD+ and NADP+?
	1. thiamin
	2. riboflavin
	3. niacin
	4. biotin
7. Phylloquinone and menaquinone are forms of \_\_\_\_\_.
	1. vitamin A
	2. vitamin D
	3. vitamin E
	4. vitamin K
8. What results when vitamin K is in short supply?
	1. There is little or no clotting of blood.
	2. There is insufficient absorption of calcium from intestines.
	3. There is little or no conversion of *cis*-retinal to *trans*-retinal.
	4. There is little or no synthesis of cholesterol.
9. What is the coenzyme form of riboflavin?
	1. FAD
	2. coenzyme A
	3. NAD
	4. coenzyme Q
10. The most common nutrient deficiency in the world is with
	1. energy.
	2. calcium.
	3. iron.
	4. glucose.
11. The inability to produce intrinsic factor protein can result in a severe \_\_\_\_\_ deficiency.
	1. vitamin C
	2. vitamin B12
	3. vitamin B6
	4. folate
12. Vitamin C functions as a(n):
	1. coenzyme.
	2. antioxidant.
	3. intrinsic factor.
	4. agent to bind biotin.
13. What cation is the major one in ruminant sweat and typically high in forages?
	1. calcium
	2. sodium
	3. phosphorous
	4. potassium
14. What compound is broken apart by bacterial cellulases?
	1. starch
	2. cellulose
	3. protein
	4. lactose
15. What vitamin name is now given to a series of compounds call *retinoids*?
	1. A
	2. D
	3. K
	4. E
16. What does a deficiency of vitamin A cause?
	1. night blindness
	2. rickets
	3. hemolytic anemia
	4. bleeding

**True/ False: 1 point each**

1. \_\_\_\_\_\_\_\_ Microbes protect the ruminant animal from various toxic

 compounds such as mimosine.

1. \_\_\_\_\_\_\_\_ Phytates and oxalates enhance absorption of many minerals.
2. \_\_\_\_\_\_\_\_ The ruminant animal ruminates for about 8 hours/day to reduce

 particle size of the feed.

1. \_\_\_\_\_\_\_\_ Vitamin E protects cell membranes by donating electrons,

 thereby reducing free radicals that damage the fatty acids in

 phospholipid bilayers.

1. \_\_\_\_\_\_\_\_ Beta-carotene is a major provitamin A carotenoid.
2. \_\_\_\_\_\_\_\_ Vitamin C is important in colds.
3. \_\_\_\_\_\_\_\_ Although exceptions do exist, generally, water-soluble vitamins

 are very toxic when consumed in large amounts.

1. ------------- Urea has about 281% protein equivalent.
2. ------------- Urea is an example on NPN.
3. ------------- Ammonia toxicity is similar to urea toxicity.
4. ------------- Non ruminants can utilize NPN.
5. ------------- High fiber fraction is associated with plant cell content.
6. ------------- Legumes have lower leaf: stem ratio.
7. ------------- Cell wall of legumes is more lignified and of more digestibility

 compared to that of grasses.

1. ------------- Orchard grass is an example of cool season grasses.
2. ------------- Alkaloids are toxic substances available in some legumes.
3. ------------- Quality of hay increased with maturity.

What is the purpose of roughage ammoniation? **3 points**

What are the factors that affect roughage quality? **4 points**

Name three chemical treatments of hay. **3 points**

Name two methods of roughage processing. **4 points**

What is the proximate percentages of volatile fatty acids in a sheep rumen when consuming high roughage ration?  **3points**