Trace Element Deficiency in Cattle

First Name:		**Last Name:**	
Email Address:		**Veterinary Practice:**	
Postcode:			

Please circle <u>one</u> answer only e.g. 

1. Copper deficiency may be caused by antagonism from which of the following elements?

A. Lead
B. Nitrates
C. Molybdenum
D. Potassium

2. Clinical signs of copper deficiency are usually seen in:

A. Housed calves
B. Young animals at pasture
C. High yielding cows fed high concentrate rations
D. Dry cows at pasture

3. The diagnosis of clinical disease caused by copper deficiency is based upon:

A. Faecal analysis
B. Plasma or serum copper concentrations
C. Liver copper concentrations
D. Muscle enzyme concentrations

4. Selenium and Vitamin E deficiency leads to damage of which body tissues?

A. Lungs
B. Liver
C. Uterus
D. Skeletal, cardiac and respiratory muscles

5. Selenium and vitamin E provision to newborn calves in best achieved by:

A. Vitamin E/Se injection at birth
B. Colostrum ingestion following supplementation of the dam's diet during late pregnancy
C. Oral drenching with selenium salts
D. Administration of a glass bolus containing copper, cobalt and selenium.

6. White muscle disease is caused by:

A. Cobalt deficiency
B. Copper deficiency
C. Copper poisoning
D. Selenium/vitamin E deficiency

7. Cobalt has an important biological role as a constituent of:

A. Vitamin B1
B. Vitamin B2
C. Vitamin B6
D. Vitamin B12

8. Cobalt deficiency results from:

A. Interference from high dietary molybdenum concentrations
B. Ingestion of grass/crops grown on cobalt deficient soils.
C. Crops grown on acidic soils
D. Ingestion of grass/crops high in potash

9. The diagnosis of cobalt deficiency is best determined by:

A. Measuring serum vitamin B12 concentrations
B. Measuring liver vitamin B12 concentrations
C. Improved growth following vitamin B12 injection
D. Measuring serum cobalt concentrations

10. Treatment of cobalt deficiency is best achieved by:

A. Administration of a glass bolus containing copper, cobalt and selenium.
B. Oral drenching with cobalt
C. Provision of free choice minerals high in cobalt
D. Vitamin B12 injections weekly for several weeks