Quiz #5  
AVS 305  
September 29, 1999

1. What is the first law of thermodynamics? (1 point)
   Energy can neither be created nor destroyed - just transferred or changed in form.

2. The efficiency of conversion of chemical energy to work energy is poor. What is produced instead of work energy? (1 point)
   Heat energy

3. How many joules are in 1 calorie? (1 point)
   $4700 \text{cal} = 1 \text{J}$
   $1 \text{cal} = \frac{1}{4700} \text{J}$

4. What is the high energy compound synthesized mainly in mitochondria by the processes of oxidative phosphorylation? (1 point)
   Protein $\times$ ATP

5. What is measured during indirect calorimetry to estimate heat production? (1 point)
   Consumption of Oxygen

6. What is the principal site of lipid digestion in the ruminant? (1 point)
   Abomasium $\times$ Small intestine

7. What is the initial site of protein digestion in the nonruminant? (1 point)
   Stomach

8. What does a bomb calorimeter measure? (1 point)
   Heat energy released from an animal $\times$ Gross Energy

9. How many calories are in 1 kilocalorie? (1 point)
   $1000 \text{cal} = 1 \text{ kcal}$

10. Where are the majority of volatile fatty acids absorbed from in the horse? (1 point)
    Small intestine $\times$ Colon

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