Use the following Key to answer Questions 1-7

a. 1, 2, and 3 are correct
b. 1 and 3 are correct
c. 2 and 4 are correct
d. only 4 is correct
e. all are correct

1. Determination of person’s vitamin status can be made by chemical measurement of:
   a. the active vitamin in fluids or cells
   b. urinary metabolites of the vitamin
   c. enzymatic activity requiring the vitamin
   d. urinary metabolites of a substance whose production is dependent upon the vitamin

2. Absorption of dietary vitamin B12 requires:
   a. pancreatic proteases
   b. active phosphorylation
   c. intrinsic factor
   d. intestinal esterases

3. A deficiency of vitamins A, E, and D can be associated with which of the following clinical problems:
   a. pancreatic insufficiency
   b. alcoholic liver disease
   c. biliary tract disease
   d. chronic calorie malnutrition

4. Vitamins:
   a. comprise a group of small molecular weight compounds
   b. serve as cofactors in a number of enzyme reactions
   c. are obtained from diet (food sources)
   d. are a special group of amine compounds found in herbs

5. Vitamin deficiencies are the result of
   a. inadequate concentration in the diet
   b. inadequate enzyme intake
   c. inadequate intestinal absorption
   d. inadequate conversion to molecular forms

6. The fat soluble vitamins include:
   a. Vitamin A
   b. Vitamin E
   c. Vitamin K
   d. Thiamine

7. The water soluble vitamins include:
1. Vitamin C
2. Riboflavin
3. Pyridoxine
4. Vitamin B

8. Which of the following groups of vitamins can be synthesized by the human liver?:
   a. fat soluble vitamins
   b. water soluble vitamins
   c. carotenoids
   d. all of the above
   e. none of the above

9. Which of the following vitamins is necessary for the synthesis of active coagulation factors?
   a. Vitamin A
   b. Niacin
   c. Vitamin D
   d. Biotin
   e. Vitamin K

10. Which of the following vitamins is believed to function as an antioxidant?
    a. Vitamin A
    b. Vitamin D
    c. Vitamin E
    d. Vitamin K
    e. Vitamin B₁₂

11. MATCH the precursor with the biologically active vitamin.

<table>
<thead>
<tr>
<th>Precursor</th>
<th>Active vitamin</th>
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<tbody>
<tr>
<td>a. riboflavin</td>
<td>i. — retinol (Vitamin A)</td>
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<tr>
<td>b. pyridoxal</td>
<td>ii. — vitamin B6</td>
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<tr>
<td>c. beta-carotene</td>
<td>iii. — nicotinamide adenine dinucleotide (NAD)</td>
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<tr>
<td>d. ascorbic acid</td>
<td>iv. — coenzyme A</td>
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<tr>
<td>e. pantothenic acid</td>
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<tr>
<td>f. biotin</td>
<td>v. — flavin adenine dinucleotide</td>
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<tr>
<td>g. niacin</td>
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<tr>
<td>h. citric acid</td>
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</tbody>
</table>

12. While vitamins A and E are stored for relatively long/short time periods, vitamins K, B₆, and C are stored for relatively long/short time periods:
   a. long/short
b. long/long
c. short/long
d. short/short
e. none of the above for these combinations of vitamins

13. The dietary sources of the fat soluble vitamins are animal organ meats (i.e., liver) while the dietary sources of the water soluble vitamins are fruits and vegetables.
   a. True
   b. False

Answer:
1. e (p. 726)
2. b (p. 744-746)
3. e (p. 726, 727)
4. a (p. 723)
5. b (p. 723, 726)
6. a (p. 726)
7. e (p. 733, 734)
8. e (p. 723)
9. e (p. 733)
10. c (p. 731)
11. i. c (p. 727), ii b (737), iii g (737), iv e (743), v a (735)
12. a (p. 727, 734)
13. b (p. 727-750)