1. Hypothyroidism early in life would result in:
   a. cretinism
   b. dwarfism
   c. gigantism
   d. acromegaly
   e. rapid death

2. When there is a significant deficiency of T_4 and T_3 secretion in a growing child:
   a. acromegaly soon results
   b. mental and physical growth are hindered
   c. death soon ensues
   d. carbohydrate catabolism accelerates
   e. Graves’ disease results

3. The thyroid is ultimately controlled by:
   a. anterior pituitary
   b. posterior pituitary
   c. hypothalamus
   d. adrenal
   e. no other gland(s)

4. Which of the following substances would be required first, considering their effects and interactions:
   a. thyroid stimulating hormone
   b. thyrotropin release-stimulating hormone
   c. thyroxin
   d. thyroglobulin
   e. triiodothyronine

5. Normally most thyroxin is:
   a. in the form of triiodothyronine
   b. within the colloid of the thyroid, in storage
   c. free in blood plasma
   d. bound with a binding globulin in plasma
   e. in no particular place nor situation

6. Which of the following is not a T_3/T_4 function:
   a. stimulating brain oxidative respiration
   b. promoting carbohydrate metabolism
   c. promoting protein synthesis
   d. promoting growth and development
   e. promoting lipid metabolism

7. Which of the following, if over-secreted, would result in hyperthyroidism:
   a. thyroid-stimulating hormone
   b. thyrotropin-releasing hormone
   c. triiodothyronine (T_3)
   d. tetraiodothyronine (T_4)
   e. all of the above
8. Which of the following would indicate mature hypothyroidism:
   a. lethargy
   b. depressed mental functions
   c. obesity
   d. decreased appetite
   e. all of the above

9. Thyroxine and triiodothyronine stimulate which of the following in all cells of the body:
   a. protein synthesis
   b. carbohydrate metabolism
   c. lipid metabolism
   d. growth and development
   e. all of the above

10. A goiter could be produced by:
    a. hyperthyroidism
    b. excess TRH secretion
    c. excess TSH secretion
    d. iodine deficiency
    e. all of the above are possible causes

11. What is the carbohydrate effect of $T_3$ and $T_4$:
    a. stimulates gluconeogenesis
    b. increased glycogenesis
    c. lowers blood glucose
    d. stimulates carbohydrate metabolism generally
    e. it has none, except in the brain

12. Which of the following would indicate mature hyperthyroidism:
    a. lethargy
    b. depressed mental functions
    c. obesity
    d. decreased appetite
    e. none of the above

13. What is the protein effect of $T_3$ and $T_4$:
    a. increase amino acid use for gluconeogenesis
    b. stimulate enzyme synthesis
    c. stimulate structural protein synthesis
    d. depress all protein synthesis
    e. they have none

14. Thyroid hormones are stored within follicles as:
    a. TSH
    b. thyroglobulin
    c. thyrocalcitonin
    d. $T_3$
    e. $T_4$
15. Calcium metabolism is regulated by secretions of the:
   a. thyroid
   b. parathyroid
   c. thyroid and parathyroid
   d. adrenal medulla
   e. posterior pituitary

16. Hypercalcemia would cause:
   a. decreased parathyroid hormone
   b. increased thyrocalcitonin
   c. less bone resorption
   d. less kidney reabsorption
   e. all of the above

17. Which of the following would not be a result of hyperparathyroidism:
   a. muscle weakness
   b. bone pain
   c. kidney stones
   d. nerve cell irritability
   e. increased blood calcium

18. Which of the following would not be an effect of parathyroid hormone and vitamin D:
   a. elevated blood calcium
   b. calcium removal from bone tissue
   c. calcium reabsorption by kidneys
   d. calcium excretion
   e. calcium absorption from intestines

19. Which of the following would result from hypoparathyroidism:
   a. severe hypercalcemia
   b. kidney stones
   c. bone pain from decalcification
   d. tetanic muscle spasms
   e. muscle weakness

20. Thyroid binding globulin is one of the components of T₃ or T₄, synthesized within the thyroid gland.

21. Thyroid binding globulin is the carrier for T₄ within the blood.

22. Thyroxine (T₄) is a prehormone for triiodothyronine (T₃).

23. A goiter can result from a decreased hormonal output.

24. A goiter can result from hypothyroidism or hyperthyroidism.

25. A goiter can only result from hyperthyroidism.
26. A **hypothyroid** condition should result in increased oxygen consumption.

27. A **hyperthyroid** condition would result in increased oxygen consumption.

28. Thyrocalcitonin **lowers** blood calcium.

29. Thyrocalcitonin **elevates** blood calcium.

30. Parathyroid hormone **alone** will counteract hypocalcemia.

31. Parathyroid hormone and thyrocalcitonin **both** are required to counteract hypercalcemia.

32. **Iron** is essential for proper thyroid hormone synthesis.

33. Thyrocalcitonin **alone** will counteract hypercalcemia.

34. The **synthesis** of Vitamin D within the skin technically makes this a **true** hormone.

35. T₃ and T₄ **directly** control metabolic functions of **all** cells in the body.

36. Less PTH secretion and more thyrocalcitonin secretion would occur in response to **hypocalcemia**.

37. Hypoparathyroidism would cause severe **hypercalcemia**.

38. The thyroid is controlled by **no other endocrine organ**.

39. Extra-cellular storage is a notable characteristic of **thyroxine**.