In which of the following conditions is it most likely that the TSH response to TRH will be reduced?

A. hypothyroidism due to tissue resistance to thyroid hormone
B. hypothyroidism due to disease destroying the thyroid gland
C. hyperthyroidism due to circulating antithyroid antibodies with TSH activity
D. hyperthyroidism due to diffuse hyperplasia of thyrotropes of the anterior pituitary
E. iodine deficiency

C

A young woman has puffy skin and a hoarse voice. Her plasma TSH concentration is low but increases markedly when she is given TRH. She probably has

a) hyperthyroidism due to a thyroid tumor.
b) Hypothyroidism due to a primary abnormality in the thyroid gland
c) Hypothyroidism due to a primary abnormality in the pitu-Itary gland
d) Hypothyroidism due to a primary abnormality in the hypo-Thalamus
e) Hyperthyroidism due to a primary abnormality in the hypo-thalamus

D

The enzyme primarily responsible for the conversion of T4 to T3 in the periphery is

a) D1 thyroid deiodinase.
b) D2 thyroid deiodinase.
c) D3 thyroid deiodinase.
d) thyroid peroxidase.
e) none of the above

A

The metabolic rate is least affected by an increase in the plasma level of

a) TSH.
b) TRH.
c) TBG.
d) free T4.
e) free T3

C

Which of the following is not essential for normal biosynthesis of thyroid hormones?

a) iodine
b) ferritin
c) thyroglobulin
d) protein synthesis
e) TSH

B

Which of the following would be least affected by injections of TSH?

a) thyroidal uptake of iodine
b) synthesis of thyroglobulin
c) cyclic adenosine monophosphate (AMP) in thyroid cells
d) cyclic guanosine monophosphate (GMP) in thyroid cells
e) size of the thyroid

D

Hypothyroidism due to disease of the thyroid gland is associated with increased plasma levels of

a) cholesterol.
b) albumin.
c) RT3.
d) iodide.
e) TBG.

A

Thyroid hormone receptors bind to DNA in which of the following forms?

a) a heterodimer with the prolactin receptor
b) a heterodimer with the growth hormone receptor
c) a heterodimer with the retinoid X receptor
d) a heterodimer with the insulin receptor
e) a heterodimer with the progesterone receptor

C

Increasing intracellular I– due to the action of NIS is an example of

a) endocytosis.
b) passive diffusion.
c) Na+ and K+ cotransport.
d) primary active transport.
e) secondary active transport.

A

Which of the following hormones exerts the least effect on Growth?

A) Growth hormone
B) Testosterone
C) T4
D) Insulin
E) Vasopressin

E

Which of the following pituitary hormones is an opioid peptide?

A) A-melanocyte-stimulating hormone (α-MSH)
B) B-MSH
C) ACTH
D) Growth hormone
E) B-endorphin

E

Which of the following is not characteristic of hypopituitarism?

A) Cachexia
B) Infertility
C) Pallor
D) Low basal metabolic rate
E) Intolerance to stress

A

A scientist finds that infusion of growth hormone into the Median eminence of the hypothalamus in experimental animals Inhibits the secretion of growth hormone and concludes that this Proves that growth hormone feeds back to inhibit GHRH secre-Tion. Do you accept this conclusion?

A) No, because growth hormone does not cross the blood–Brain barrier.
B) No, because the infused growth hormone could be stimulat-Ing dopamine secretion.
C) No, because substances placed in the median eminence Could be transported to the anterior pituitary.
D) Yes, because systemically administered growth hormone Inhibits growth hormone secretion.
E) Yes, because growth hormone binds GHRH, inactivating it.

C

The growth hormone receptor

A) Activates Gs.
B) Requires dimerization to exert its effects.
C) Must be internalized to exert its effects.
D) Resembles the IGF-I receptor.
E) Resembles the ACTH receptor.

B

A patient with parathyroid deficiency 10 days after inadvertent Damage to the parathyroid glands during thyroid surgery would Probably have

A) Low plasma phosphate and Ca2+ levels and tetany.
B) Low plasma phosphate and Ca2+ levels and tetanus.
C) A low plasma Ca2+ level, increased muscular excitability, and A characteristic spasm of the muscles of the upper extremity (Trousseau sign).

D) High plasma phosphate and Ca2+ levels and bone demineral-
lzation.
E) Increased muscular excitability, a high plasma Ca2+ level,
And bone demineralization.

C

A high plasma Ca2+ level causes

A) Bone demineralization.
B) Increased formation of 1,25-dihydroxycholecalciferol.
C) Decreased secretion of calcitonin.
D) Decreased blood coagulability.
E) Increased formation of 24,25-dihydroxycholecalciferol.

E

Which of the following is not involved in regulating plasma Ca2+ Levels?

A) Kidneys
B) Skin
C) Liver
D) Lungs
E) Intestine

D

1,25-dihydroxycholecalciferol affects intestinal Ca2+ absorption Through a mechanism that

A) Includes alterations in the activity of genes.
B) Activates adenylyl cyclase.
C) Decreases cell turnover.
D) Changes gastric acid secretion.
E) Is comparable to the action of polypeptide hormones.

A

Which of the following would you expect to find in a patient Whose diet has been low in calcium for 2 mo?

A) Increased formation of 24,25-dihydroxycholecalciferol
B) Decreased amounts of calcium-binding protein in intestinal Epithelial cells
C) Increased parathyroid hormone secretion
D) A high plasma calcitonin concentration
E) Increased plasma phosphates

C

In osteopetrosis, which of the following is defective?

A) Phosphate deposition in trabecular bone
B) Structure of parathyroid hormone related protein (PTHrP)
C) Osteoblasts
D) Osteoclasts
E) Bone collagen

D

At epiphysial closure

A) Cortical bone and trabecular bone merge.
B) Osteoclasts and osteoblasts undergo differentiation.
C) There is an extended amount of proliferating cartilage that Contributes to bone elongation.
D) Lacunae meet the trabecular bone.
E) Ephyses unite with the shaft to end normal linear bone Growth.

E

Which of the following are incorrectly paired?

A. B cells : insulin
B. D cells : somatostatin
C. A cells : glucagon
D. pancreatic exocrine cells : chymotrypsinogen
E. F cells : gastrin

E

Which of the following are incorrectly paired?

A. epinephrine : increased glycogenolysis in skeletal muscle
B. insulin : increased protein synthesis
C. glucagon : increased gluconeogenesis
D. progesterone : increased plasma glucose level
E. growth hormone : increased plasma glucose level

D

Insulin increases the entry of glucose into

A. all tissues.
B. renal tubular cells.
C. the mucosa of the small intestine.
D. most neurons in the cerebral cortex.
E. skeletal muscle.

E