

Question Bank for Endocrinology course 2021-2022

Type 1 Questions: Fill in the following GAPS with suitable words.

Set 01

1. involves coordinating the activities of the various organs and systems throughout the body.
2. A molecule that binds specifically and noncovalently to a receptor protein is considered a of the receptor.
3. The anterior pituitary, also called the, constitutes about three-quarters of the pituitary as a whole.
4. During stress, the hypothalamus triggers ACTH secretion, which leads to secretion and mobilization of materials needed for tissue repair.
5. Body dehydration raises the osmolarity of the blood, which is detected by hypothalamic neurons called
6. PTH also reduces urinary excretion of calcium ions, and it stimulates the production of, a kidney hormone that promotes intestinal absorption of calcium.
7. homeostasis is so crucial to neuromuscular and cardiovascular function that a person can die within just a few days if the parathyroids are removed without instituting hormone replacement therapy.
8. Adrenal raise the heart rate and blood pressure, stimulate circulation to the muscles, increase pulmonary airflow, and raise the metabolic rate.
9. Falling blood pressure leads to increased aldosterone secretion by a mechanism called the system.
10. is the most potent glucocorticoid that is secreted by the adrenal cortex.

Set 02

1. Any hormone that raises blood glucose concentration is called a hormone.
2. Insulin insufficiency or inaction (receptor insensitivity) is well known as the cause of
3. The effects of the products of endocrine cells on surrounding cells are termed effects.
4. Insulin promotes glycogen synthesis by enhancing the activity of, and inhibiting the activity of glycogen phosphorylase.
5. In the presence of androgen-binding protein (ABP), stimulates spermatogenesis.
6. Primary adrenal insufficiency due to disease processes that destroy the adrenal cortex is called disease.
7. Iodine deficiency leads to
8. In patients with primary hyperaldosteronism, secretion is depressed.
9. The syndrome of adult hypothyroidism is generally called
10. Hyperparathyroidism due to hypersecretion from a functioning parathyroid tumor in humans is characterized by and hypophosphatemia.

Type 2 Questions: Choose one correct answer for each of the following statements.

Set 01

1. Hormones released by neurons are often referred to as
a. paracrine b. autocrine c. neurohormones d. neurotransmitters
2. is determined by the rates of dissociation and association for the hormone-receptor complex under equilibrium conditions.
a. Affinity b. Specificity c. Spare receptor d. Cellular localization
3. Peptides and catecholamines bind to receptors.
a. nuclear b. cytoplasmic c. intracellular d. cell membrane
4. Insulin binds to to exert its physiological actions.
a. G-protein coupled receptors b. receptor tyrosine kinases
c. intracellular receptors d. ligand-gated channels
5. Somatostatin inhibits the secretion of
a. growth hormone b. prolactin c. luteinizing hormone d. ACTH
6. LH is secreted by the cells.
a. lactotropic b. corticotropic c. thyrotropic d. gonadotropic
7. Uterine stretching sends a nerve signal to the brain that stimulates release.
a. ADH b. oxytocin c. FSH d. TRH
8. increases blood levels of Ca^{2+} by stimulating osteoblasts to secrete a growth factor (osteoclast-differentiation factor, ODF) that binds to osteoclasts.
a. calcitonin b. ADH c. PTH d. calcitriol
9. The alpha-1 adrenergic receptor is coupled with protein.
a. $G_{\alpha q}$ b. $G_{\alpha s}$ c. $G_{\alpha i}$ d. None of them
10. The zona of the adrenal cortex is the source of mineralocorticoids.
a. fasciculata b. reticularis c. glomerulosa d. chromaffin

Set 02

1. promotes the synthesis of glycogen, fat, and protein, thereby promoting the storage of excess nutrients for later use and enhancing cellular growth and differentiation.
a. Somatostatin b. Insulin c. Amylin d. Pancreatic polypeptide (PP)
2. is the major GLUT on neurons. It also has a very high affinity for glucose and is responsible for transferring glucose into neuronal cells at the lower concentrations found in the central nervous system.
a. GLUT 4 b. GLUT 1 c. GLUT 2 d. GLUT 3
3. The corpus luteum and placenta secrete, which synergizes progesterone in stimulating the multiplication of decidual cells in early pregnancy and promotes the growth of blood vessels in the pregnant uterus.
a. relaxin b. aldosterone c. ACTH d. thyrotropin
4. The of the ovarian cycle extends from the beginning of menstruation until ovulation, which is from day 1 to day 14 in an average cycle.
a. luteal phase b. ovulation c. follicular phase d. None of them

5. Progesterone and estrogen suppress pituitary secretion of, thereby preventing more follicles from developing during pregnancy.
 a. thyrotropin b. Prolactin c. ACTH d. FSH and LH
6. Nurse cells (Sertoli cells) secrete, which inhibits FSH secretion and in turn reduces sperm production.
 a. GnRH b. inhibin c. testosterone d. androgen-binding protein (ABP)
7. LH stimulates the interstitial endocrine cells (Leydig cells) of the testes to secrete
 a. GnRH b. inhibin c. testosterone d. androgen-binding protein (ABP)
8. In type 1 diabetes mellitus, pancreatic β cells are destroyed leading to an inability to synthesize insulin, often from a very young age. This is an example of
 a. hormone deficiency b. hormone excess c. hormone resistance d. All of them
9. occurs in patients afflicted with an adenoma derived from pituitary somatotropes that secretes excessive quantities of growth hormone (GH).
 a. Addison disease b. Graves' disease c. Cretinism d. Gigantism
10., the most common form of dwarfism in humans, is characterized by short limbs with a normal trunk. It is caused by a mutation in the gene that codes for fibroblast growth factor receptor 3 (FGFR3).
 a. Adrenogenital syndrome b. Achondroplasia c. Cushing syndrome d. Acromegaly

Type 3 Questions: Indicate whether each of the following statements is TRUE or FALSE.

Set 01

1. The hydrophobic or very small signaling molecules cannot enter a cell at meaningful rates through the cell membrane.
2. Pituitary hormones are not secreted at constant rates.
3. Parathyroid hormone (PTH) stimulates osteoblast activity, thus promoting calcium deposition and bone formation.
4. DHEA is produced in tremendous quantities by the large adrenal glands of the male fetus and plays an important role in the prenatal development of the male reproductive tract.
5. After menopause, the ovaries no longer function and only the adrenals secrete estrogen.

Set 02

1. Somatostatin acts locally within the islets of Langerhans themselves to enhance secretion of both insulin and glucagon.
2. Insulin produces a wide variety of effects from immediate (within seconds), such as the effects on growth and cellular differentiation.
3. The gonadotropins (FSH and LH) are not the key hormonal signals for the testicular function.
4. Excess mineralocorticoid secretion leads to K^+ retention and Na^+ depletion.
5. Obese ob/ob mice that cannot make leptin are fertile.

Type 4 Questions: Answer the following questions briefly.

Set 01

1. Hormones are organized into three main classes based on their chemical structure. What are they? Explain them briefly.
2. What are the G protein-coupled receptors? Explain them briefly.
3. What is oxytocin? Explain its physiological actions?
4. What are the mechanisms of growth hormone (GH) – insulin-like growth factor (IGF) actions? Explain it briefly.
5. Explain thyroid hormone biosynthesis and secretion.

Set 02

1. Explain the mechanism of insulin secretion from beta (β) cells of pancreatic islets of Langerhans.
2. Insulin acts to promote triglyceride storage in adipocytes by a number of mechanisms. What are they? Explain them.
3. The hormones with the strongest influences on pregnancy are estrogens, progesterone, and human chorionic gonadotropin. Explain the role of estrogens during pregnancy.
4. The testosterone and dihydrotestosterone (DHT), the two androgens, bring about the many bodily changes familiar to all who have endured adolescence. What are the bodily changes that are caused by androgens?
5. What are the symptoms and causes of hyperthyroidism? Explain it.