



Endocrine Physiology

Instructions:

- (I) Time is 1hr only
- (II) Attempt all Questions
- (III) If you get more than 20, you are good at Physiology

1. *The following are the effects of PTH hormone except?*
 - A. PTH increases phosphate excretion in the urine
 - B. PTH acts directly on bone to increase bone resorption
 - C. PTH also increases the formation of 1,25-dihydroxycholecalciferol
 - D. PTH stimulates osteoclasts but not osteoblasts
 - E. Ca^{2+} excretion in the urine is often increased in hyperparathyroidism
2. *Negative nitrogen balance is performed by:*
 - A. Thyroid hormone in large dose.
 - B. Growth hormone.
 - C. Parathyroid hormone.
 - D. Insulin.
 - E. Cortisol
3. *Pituitary dwarfism is characterized by all except:*
 - A. Mental retardation.
 - B. Mental normal.
 - C. Normal sexual function.
 - D. Stunted growth.
4. *Myxedema is characterized by all except:*
 - A. Slow mentation.
 - B. Pitting edema.

- C. Yellow skin.
 - D. Atherosclerosis.
5. ***Tetany is caused by all except:***
- A. Alkalosis.
 - B. Hypoparathyroidism.
 - C. Decreased vitamin D
 - D. Decreased phosphate level.
6. ***The following are true of hyperparathyroidism except?***
- A. It is characterized by hypercalcemia and hypophosphatemia.
 - B. Humans with PTH-secreting adenomas are usually asymptomatic.
 - C. Chronic renal disease and rickets can cause secondary hyperthyroidism.
 - D. Individuals heterozygous for inactivating mutations have familial benign hypocalciuric hypercalcemia.
 - E. Mutations in the calcium receptor gene cause unpredictable long-term changes in plasma Ca^{2+} .
7. ***Which of the following is the most potent stimulus of calcitonin?***
- A. Gastrin
 - B. β -adrenergic agonists
 - C. Dopamine
 - D. Cholecystokinin (CCK)
 - E. Secretin
 - F. Estrogens
8. ***Cushing disease is characterized by all except:***
- A. Hyperglycemia.
 - B. Fat deposition in limbs.
 - C. Muscle weakness.
 - D. Polycythemia.
 - E. Poor wound healing

9. In relation to hypothyroidism, find the false statement below

- A. Methimazole but not propylthiouracil inhibits D₂ deiodinase.
- B. Myxedema is the syndrome of adult hypothyroidism.
- C. Iodide under certain conditions inhibits thyroid function.
- D. In normal individuals, large doses of iodide cause the Wolff–Chaikoff effect.
- E. In primary hypothyroidism, T₃ and T₄ are low but TSH is high

10. Thyroid hormones do not increase oxygen consumption in all except:

- A. Brain.
- B. Lung.
- C. Pituitary.
- D. Uterus.
- E. Spleen

11. The virilizing form of adrenogenital syndrome usually occurs due to a deficiency of:

- A. 21 β hydroxylase
- B. 17 α hydroxylase
- C. 11 β hydroxysteroid dehydrogenase
- D. 3 α hydroxysteroid dehydrogenase

12. Impaired growth hormone secretion

- A. In children causes delayed puberty.
- B. In children leads to short stature with more stunting of the limbs than the trunk.
- C. Is associated with pale, fine and soft skin.
- D. In adults leads to a reduction in the size of the viscera.
- E. Can be treated effectively with bovine growth hormone.

13. In diabetic ketosis there is a decreased metabolic breakdown of

- A. Ketones.
- B. Glycogen.
- C. Glucose.
- D. Fat.
- E. Amino acids.

14. The risk of tetany is increased by

- A. Sudden rises in plasma bicarbonate.
- B. Sudden rises in plasma magnesium.
- C. Removal of the anterior pituitary gland.
- D. The onset of respiratory failure.
- E. The onset of renal failure.

15. When a patient with diabetes insipidus is treated successfully with anti-diuretic hormone the

- A. Urinary flow rate should fall by about 50 percent.
- B. Urinary output should be reduced to around 5ml/minute
- C. Urinary osmolality should rise to between 100 and 200 mosmol/litre.
- D. Salt intake should be carefully regulated.
- E. Blood pressure should stabilize within the normal range.

16. Possible consequences of hypothyroidism include having

- A. A normal body core temperature.
- B. A tendency to fall asleep frequently.
- C. Increased body hair (hirsutism).
- D. Moist hands and feet.
- E. Prominent eyeballs.

17. The plasma level of adrenocorticotrophic hormone (ACTH)

- A. Is normally maximal around midnight.
- B. Is regulated mainly by the blood cortisol level.
- C. Shows exaggerated circadian fluctuations with an adrenal tumour.
- D. Is raised in the presence of complete adrenal failure.
- E. Is raised in patients on long-term high dosage glucocorticoids.

18. During an oral glucose tolerance test the

- A. Subject is given 5–10 grams of glucose.
- B. Plasma glucose should rise by less than 10 per cent from the fasting level.
- C. Plasma insulin should rise by about 100 per cent from the fasting level.
- D. Rise in plasma glucose is less than with intravenous administration.

E. Rise in plasma insulin is less than with intravenous administration.

19. Parathormone

- A. Decreases the renal clearance of phosphate.
- B. Mobilizes bone calcium independently of its actions on the kidney.
- C. Depresses the activity of the anterior pituitary gland.
- D. In the blood decreases when the calcium level falls.
- E. Stimulates the initial activation of vitamin D (cholecalciferol) in the kidney.

20. The following happen when secretory activity in the thyroid gland increases except which one?

- A. The gland takes up iodide from the blood at a faster rate.
- B. The follicles shrink as the colloid content falls.
- C. The follicular cells become more columnar.
- D. The follicular cells ingest colloid by endocytosis.
- E. The blood level of thyrotropin (TSH) increases.

21. Which of the following about cortisol is false?

- A. Is bound in the plasma to an alpha globulin.
- B. Is inactivated in the liver and excreted in the bile.
- C. Injections lead to a rise in arterial pressure.
- D. Inhibits release of ACTH from the anterior pituitary gland.
- E. Is released with a circadian variation so that cortisol blood levels peak in the morning.

22. The following are true about the concentration of ionized calcium in plasma except which one?

- A. The main regulator of parathormone secretion.
- B. It is more than 10^5 times higher than the free ionized calcium concentration in intracellular fluid.
- C. About 50 per cent of the total plasma calcium concentration.
- D. Reduced when plasma pH rises.
- E. Reduced when the plasma protein level rises.

23. The main stimulus for aldosterone secretion is:

- A. Hyponatremia.
- B. Hypernatremia.
- C. Hyperkalemia.
- D. Hypocalcemia.
- E. Standing from supine position

24. Glucocorticoid injections lead to decreases in the following except?

- A. Lymph gland size.
- B. Fibroblastic activity.
- C. Anabolic activity in muscle.
- D. Bone deposition.
- E. Membrane stability in mast cell and lysosomes.

25. A female was born normal, after puberty, she suffers from hair in her face, her voice was deep. This disease is called:

- A. Precocious puberty.
- B. Virilism.
- C. Feminization.
- D. Pseudohermaphrodite.
- E. None of the above.

26. Antidiuretic hormone (vasopressin)

- A. Is released from nerve endings in the posterior pituitary gland.
- B. Tends to raise the osmolality of plasma rise.
- C. Increases the permeability of the cells in the loop of Henle to water.
- D. Secretion is little affected by changes in plasma osmolality of less than 10 per cent.
- E. Secretion decreases when plasma volume falls but osmolality is unchanged.

27. Parathormone

- A. Secretion is regulated by a pituitary feedback control system.
- B. Acts indirectly on bone to increase bone resorption.
- C. Increases the urinary output of calcium.
- D. Decreases phosphate excretion.
- E. Directly promotes absorption of calcium from the intestines.

28. The following are true about growth hormone except?

- A. Promotes positive nitrogen and phosphorus balance.
- B. Secretion is under hypothalamic control.
- C. Levels in the blood are higher in children than in adults.
- D. Secretion surges during sleep.
- E. Stimulates the liver to secrete somatomedins which regulate bone and cartilage growth.

29. Thyroid hormones, when secreted in excess, may cause an increase in all the following except?

- A. Peripheral vasodilation.
- B. Frequency of defaecation.
- C. Energy expenditure required for a given workload.
- D. Duration of tendon reflexes.
- E. Heart rate when cardiac adrenergic and cholinergic receptors are blocked.

30. In plasma, the half-life of

- A. A hormone is half the time taken for it to disappear from the blood.
- B. Insulin is between five and ten hours.
- C. Thyroxine is shorter than that of adrenaline.
- D. Triiodothyronine is longer than that of thyroxine.
- E. Noradrenaline is longer than that of acetylcholine.

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