# **Endocrinology. Final tests**

# **Variant 7**

**1. Which of the following hormones is LEAST likely to have a nocturnal peak?**

**A. thyroxine (T4)**

B. ACTH

C. cortisol

D. prolactin

E. growth hormone (GH)

**2. In a healthy person, administration of propylthiouracil (a drug that blocks thyroidal peroxidase activity) is most likely to cause:**

A. exophthalmos

**B. goiter**

C. prognathism

D. hyperthermia

E. tachycardia

**3. A patient with untreated type I diabetes mellitus is most likely to have increased**:

A. muscle glucose uptake

**B. lipolysis**

C. hepatic glycogen synthesis

D. muscle protein synthesis

E. plasma pH

**4. An unconscious patient is dehydrated, has rapid deep respirations, and has a fruity breath odor. The most likely explanation is**:

A. hypercalcemia

B. hypoglycemia

**C. diabetic ketoacidosis**

D. adrenal insufficiency

E. hypothyroidism

5. Which section communicates largely with the hypothalamus:

1. anterior
2. superior
3. **posterior**
4. inferior

6. Which is **not** a function of oxytocin:

1. **cause morning sickness**
2. helps contract uterus smooth muscle
3. secrete milk after birth
4. function increases closer to time of birth

7.Which of the following is **not** a hormone of the anterior pituitary gland:

1. growth hormone
2. prolactin
3. leutinizing hormone
4. **oxytocin**

**8**. The pituitary gland is below the \_\_\_\_\_\_\_\_.

1. pineal gland
2. **hypothalamus**
3. thalamus
4. pons

9**. Fasting for 4 days would be most likely to**:

A. decrease plasma reverse T3 (rT3)

B. increase plasma thyroxine (T4)

**C. decrease plasma triiodothyronine (T3)**

D. increase plasma thyroglobulin

E. increase 5'-deiodinase activity

10**. Treatment of a healthy individual with excess thyroxine (T4) is most likely to:**

A. increase thyroid size

**B. decrease thyroidal radioactive iodine uptake**

C. increase the TSH response to TRH

D. decrease liver synthesis of thyroid binding globulin (TBG)

E. increase the thyroidal coupling reaction

11. Patient A., 38 years old. Operated a diffuse toxic goiter. After the operation the state a patient became worse, palpitation, shortness of breath, diarrhea, fever. Objective review: fever is 38.6°С, pulse - 160 beats/min, blood pressure - 85/40***. Preliminary diagnosis***:

1. **Thyrotoxic crisis**
2. Thyrotoxic hepatitis
3. Pneumonia
4. Adrenal crisis
5. Acute pancreatitis

12. Patient M., 33 years old, after a stressful incident, presented with weakness, a 10 kg weight loss despite good appetite, feeling of inner tension, irritability, emotional lability, sweating, tachycardia, tremor, menstrual irregularity, diarrhea. Objective review: pulse 110 per min. Blood pressure - 130/65, cardiac tones normal, skin is moist, warm, thyroid gland enlarged, with a firm and homogenous mass. ***Substantiate diagnosis:***

1. Hashimoto thyroiditis
2. **Diffuse toxic goiter**
3. Diffuse nontoxic goiter
4. Nodular goiter
5. Sporadic diffuse nontoxic goiter

13. Patient J., is a 52 year old female diagnosed with type 2 diabetes mellitus 7 years ago. She notes that she has had variable control over her diabetes in the past, although her hemoglobin A1C has been excellent for the past 4 years. ***Which of the following would classify this patient as “high risk” for development of a diabetic foot ulcer?***

1. Absence of palpable pedal pulses
2. **Abnormalities of sensation via the monofilament test**
3. Presence of musculoskeletal foot deformities
4. Previous history of foot ulcers
5. All of the above

14**.** A 56 year old man with type 2 diabetes mellitus of 23 years duration was seen in the clinic. He was noted to have hypertension (blood pressure 160/100 mmHg) and microalbuminuria and his serum creatinine was 120 mmol/L (Normal 50–110 mmol/L). He was prescribed a small daily dose of the angiotensin-converting enzyme inhibitor ramipril. Three days later, he was seen in the Emergency Room having become acutely short of breath. His blood pressure was 110/70 with a tachycardia of 110/min and he had bilateral basal crackles on auscultation of his chest. The chest X-ray indicated that he had developed pulmonary edema. The serum creatinine had risen markedly to 410 mmol/L. ***Which investigation would you perform next?***

1. Calculation of glomerular filtration rate based on serum creatinine level
2. Measurement of 24-hour urine protein excretion
3. Serum protein electrophoresis
4. ECG, ultrasound
5. **All of the above**

15. A 7-years-old child with cramps has hypocalcemia and radio­logic signs of osteoporosis. Parathyroid hormone blood level is increased. Hyperphosphatemia is revealed. The child has signs of physical and mental retardation. A treatment with parathyroid hormone was not effective. **What is the preliminary diagnosis?**

1. **Pseudohypoparathyroidism**
2. Pseudohyperparathyroidism
3. Pseudoidiopathic hypoparathyroidism
4. Idiopathic hypoparathyroidism
5. Primary hyperparathyroidism

16. Which hormone speeds up the body’s metabolism?

* 1. **Triiodothyronine**
  2. Calcitonin
  3. Thyroxine
  4. All of the Above

17. Which hormone causes a decrease in the calcium concentration in the blood?

1. thyroxine
2. **Calcitonin**
3. Triiodothyronine
4. All of the above

18. Which one is NOT a symptom of hyperthyroidism?

* 1. feeling hot
  2. weight loss
  3. shaking
  4. **constipation**

19. Which one is NOT a symptom of hypothyroidism?

* 1. fatigue
  2. weight gain
  3. feeling cold
  4. **shaking**

20. What is the disease where one of four parathyroid glands becomes an enlarged, benign tumor, producing too much Calcium to maintain good homeostasis?

* 1. hypoparathyroidism
  2. **hyperparathyroidism**
  3. parathyroid cancer
  4. basophilism

21. A patient Q., 60 years old, she’s diagnosis Ridel’s thyroiditis during 4 years ago***. Which principle of treatment do you used?***

* 1. Acetylsalicylic acid
  2. Lugol’s solution
  3. β-Adrenergic blockers
  4. **Surgery**
  5. Radioactive iodine (131I)

22. A patient Z., 58 years old has all clinical and laboratory presentation of subacute thyroiditis. ***Which group of drugs is the most suitable in the treatment approach of DeQuervain’s thyroiditis?***

1. Antibiotics and thyroid hormones
2. **Salicylates and corticosteroids**
3. Physiotherapy
4. Surgery
5. β-Adrenergic blockers

23. ***Which group of drugs is the most suitable in the treatment approach of acute thyroiditis?***

1. Salicylates
2. Physiotherapy
3. Corticosteroids
4. **Antibiotics**
5. β-Adrenergic blockers

24. At a patient M., 45 years old at the palpation of thyroid gland a nod­ule 2,0 х 3,2 cm is exposed in a left lobe, compacted, moderately painful during palpation. "Cold" nodule at scyntygrafia with I131. ***What inspection is most expedient for clarification of diagnosis?***

1. Ultrasound of thyroid gland
2. **Aspirational biopsy**
3. Determination of the TSH, T3 and T4 level in a blood
4. Immunodetection
5. Computed tomography scan (CT-scan) of thyroid gland

25. A patient B., 59 years old complains of the presence of nodule on the front surface of neck. Became ill 3 years ago. A nodule was enlarged in sizes, the timbre of voice changed, feeling of pressure appeared. Objectively: in the right lobe of thyroid a nodule is palpated 5 cm in a diameter, painless. The functional state of thyroid is not changed. What is the diagnosis?

1. Nodular euthyreoid goiter
2. Nodular hyperthyroid goiter
3. **Cancer of thyroid gland**
4. Chronic lymphomatous Hashimoto thyroiditis
5. Chronic fibrous Ridel's thyroiditis

**26.** A 35-year-old female patient has gained 20 kg weight within a year with the normal diet. She complains of chill, sleepiness, dyspnea. The patient’s mother and sister are corpulent. Objectively: height - 160 cm, weight - 92 kg, BMI - 35,9. Obesity is uniform, there are no striae. The face is amimic. The skin is dry. The tongue is thickened. Heart sounds are muffled. Heart rate - 56/min, BP - 140/100 mm Hg. The patient has constipations, amenorrhea for 5 months. TSH - 28 mkME/l (normal rate - 0,32-5). Craniogram shows no pathology. What is the etiology of obesity?

1. Hypo-ovarian
2. Hypothalamic-pituitary
3. **Hypothyroid**
4. Alimentary and constitutive
5. Hypercorticoid

**27.** A 40-year-old female patient complains of having a bulge on the anterior surface of neck for 5 years. Objectively: Heart rate - 72 bpm, arterial pressure - 110/70 mm Hg, in the right lobe of thyroid gland palpation reveals a mobile 4x2 cm node, the left lobe is not palpable, the basal metabolic rate is 6%. What is the most likely diagnosis?

1. Nodular hyperthyroid goiter
2. Riedel’s thyroiditis
3. **Nodular euthyroid goiter**
4. Mixed euthyroid goiter
5. The median cervical cyst

**28.** A 41-year-old patient with Addison’s disease had influenza. After that he developed adynamia, depression, nausea, vomiting, diarrhea and hypoglycemia. BP is 75/50 mm Hg. Blood test: decreased content of corticosterone, hydrocortisone, 13-oxycorticosteroids, 17-oxycorticosteroids. What condition has developed in the patient?

1. **Acute adrenal gland insufficiency**
2. Acute gastritis
3. Acute enterocolitis
4. Collapse
5. Diabetes mellitus

**29.** A 23-year-old woman after stress has developed thirst, polydipsia, polyuria, weight loss, increasing fatigue. Later she developed nausea and somnolence, lost consciousness and was hospitalised. Glycemia is 27 mmol/l, acetone in urine is sharply positive. Treatment for ketoacidotic coma was initiated. When would it be advisable to start preventive treatment of hypoglycemia by introduction of 5% glucose solution?

1. 2 hours after beginning of insulinotherapy
2. When patient becomes conscious
3. **After glycemia rate drops to 13-14 mmol/l**
4. After glycemia rate becomes normal
5. **E.** If glycemia decreases with the rate over 5 mmol/l per hour

**30.** A 15-year-old patient complains of excessive body weight, headache, irritability, rapid fatigability. Significant increase of body weight occurred at the age of 14. Objectively: weight is 90 kg; height is 160 sm, proportional body built. Fatty tissue is distributed evenly. There are thin pink striae (stretch marks) on the thighs, abdomen and mammary glands. BP - 145/90 mm Hg. Provisional diagnosis is:

1. Alimentary constitutive obesity
2. Somatoform autonomic dysfunction
3. Itsenko-Cushing’s disease
4. **Pubertate dyspituitarism**
5. Cushing’s syndrome

**31.** A patient complains of weight gain, chill, edemas, xeroderma, somnolence, difficulties with focusing. Objectively: height is 165 cm; weight is 90 kg; body proportions are of female type, *to*- 35*,*8*oC*, heart rate - 58/min, BP 105/60 mm Hg. Heart sounds are weakened, bradycardia is observed. Other internal organs have no changes. Thyroid gland cannot be palpated. Milk secretion from mammary glands is observed. Hormone investigation revealed increased levels of thyroid-stimulating hormone (TSH) and prolactin, and decreased level of thyroxine (T4). Which one is the cause for obesity?

1. Secondary hypothyroidism
2. **Primary hypothyroidism**
3. Prolactinoma
4. Hypopituitarism
5. Adiposogenital dystrophy

**32.** A 22-year-old patient complains of 8-months-long delay of menstruation. Anamnesis: menarche since the age of 12,5. Since the age of 18 menstruations are irregular. No pregnancies. Mammary glands have normal development; when the nipples are pressed, milk drops are discharged. On gynecological examination: moderate uterus hypoplasia. On hormonal examination: prolactin level exceeds the norm two times. On computed tomogram of the sellar region: a space-occupying lesion 4 mm in diameter is detected. The most likely diagnosis is:

1. **Pituitary tumor**
2. Lactation amenorrhea
3. Stein–Leventhal syndrome (Polycystic ovary syndrome)
4. **D.** Sheehan’s syndrome

**E.** Cushing’s disease

**33.** A 30-year-old woman complains of infertility during her 10-year-long married life. Menstruations occur since she was 14 and are irregular, with delays up to a month and longer. Body mass is excessive. Hirsutism is observed. On bimanual examination: uterine body is decreased in size; ovaries are increased in size, dense, painless, and mobile. The most likely diagnosis is:

**A. B.** Follicular cyst of ovaries

1. Genital endometriosis
2. Genital tuberculosis
3. **Stein–Leventhal syndrome (Polycystic ovary syndrome)**
4. Inflammatory tumor of ovaries

**34.** A 48-year-old patient was found to have diffuse enlargement of the thyroid gland, exophthalmia, weight loss of 4 kg in 2 months, sweating. Objectively: HR- 105/min., BP140/70 mm Hg. Defecation act is normal. What kind of therapy is recommended in this case?

1. Radioiodine
2. Propranolol
3. **Mercazolil**
4. Lugol’s solution
5. Thyroxine

**35.** A 14-year-old girl has been presenting with irritability and tearfulness for about a year. A year ago she was also found to have diffuse enlargement of the thyroid gland (II grade). This condition was regarded as a pubertal manifestation, the girl did not undergo any treatment. The girl’s irritability gradually gave place to a complete apathy. The girl developed puffy face, soft tissues pastosity, bradycardia, constipations. Skin pallor and gland density progressed, the skin developed a waxen hue. What disease can be suspected?

1. Diffuse toxic goiter
2. Thyroid carcinoma
3. **Autoimmune thyroiditis**
4. Subacute thyroiditis
5. Juvenile basophilism

**36.** A 32-year-old woman complains of dizziness, headache, palpitation, tremor. For the last several months she has been under outpatient observation for increased arterial pressure. Since recently such attacks have become more frequent and severe. Objectively: the skin is covered with clammy sweat, tremor of the extremities is present. HR110/min., BP- 220/140 mm Hg. Heart sounds are muffled. Blood test results: WBCs- 9*,*8 · 109/l, ESR- 22 mm/hour. Blood glucose - 9,8 millimole/l. What disease is the most likely cause of this crisis?

1. **Pheochromocytoma**
2. Essential hypertension
3. Preeclampsia
4. Primary hyperaldosteronism
5. Diabetic glomerulosclerosis

**37.** A child is 10 years old. The weight is 46 kg. Since birth the child has been gaining excessive weight. The parents are fullbodied. The child has undergone the following tests: carbohydrate tolerance, level of 17-ketosteroids, blood electrolytes, US of adrenal glands, cranium X-ray. The tests revealed no pathologies.The diagnosis of exogenic constitutive obesity has been made. What direction of therapy should be prioritized?

1. Sanatorium-and-spa treatment
2. Anorectic drugs
3. **Reducing diet and exercise**
4. Dehydration therapy
5. ”Fat-burning” methods

**38.** An 8-year-old child with a 3-year history of diabetes was hospitalized in hyperglycemic coma. Specify the initial dose of insulin to be administered:

**A. 0,1-0,2 U/kg of body weight per hour**

**B.** 0,05 U/kg of body weight per hour

1. 0,2-0,3 U/kg of body weight per hour
2. 0,3-0,4 U/kg of body weight per hour
3. 0,4-0,5 U/kg of body weight per hour

**39.** A 16-year-old girl has primary amenorrhea, no pubic hair growth, normally developed mammary glands; her genotype is 46 ХY; uterus and vagina are absent. What is your diagnosis?

1. Mayer-Rokitansky-Kuster-Hauser syndrome
2. Cushing’s syndrome
3. **Testicular feminization syndrome**
4. Sheehan syndrome
5. Cushing’s disease

**40.** A 25-year-old woman complains of menstruation retention lasting for 3 years. The patient explains it by a difficult childbirth complicated with profuse hemorrhage, weight loss, brittleness and loss of hair, loss of appetite, depression. Objective examination reveals no pathologic changes of uterus and uterine appendages. What pathogenesis is characteristic of this disorder?

1. Hyperproduction of estrogen
2. Hyperproduction of androgen
3. Decreased production of progesterone
4. **Decreased production of gonadotropin**
5. Hyperproduction of prolactin

**41.** A 24-year-old patient complains of gaining body mass and increased appetite. Objectively: built of hypersthenic type, body mass index is 33,2 kg/m2, waist circumference is 100 cm. Waist to hips circumference ratio is 0,95. What is the provisional diagnosis?

1. **Alimentary constitutive obesity, I stage, android type**
2. Itsenko-Cushing hypothalamic obesity, II stage, gynoid type
3. Alimentary constitutive obesity, III stage, gynoid type
4. Alimentary constitutive obesity, II stage, android type
5. Itsenko-Cushing hypothalamic obesity, I stage, android type

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2. **Nodular euthyroid goiter**
3. Riedel’s thyroiditis
4. Mixed euthyroid goiter
5. Median cervical cyst

**44.** A 64-year-old woman has been suffering from diabetes mellitus for the last 14 years. Approximately 3 days ago the skin on the distal phalanx of the I toe on the left foot became cold and bluish-black in color. Mild pain is observed in the affected area. Pulse on the pedal arteries cannot be detected, pulse on the popliteal artery is retained. Glycemia is 12,4 mmol/l. US scan: stenosis of the shin arteries, collateral compensated blood flow. Ankle-brachial pressure index is 0,7. Foot Xray: destruction of the distal phalanx of the I toe. Determine the grade of diabetic foot according to Wagner:

1. **IV**
2. I
3. II
4. III
5. V

**45.** A 32-year-old patient complains of excessive appetite, excess weight, dyspnea during physical exertion. There are fat deposits in the area of abdomen and shoulder girdle. The skin is pale-pink, adult male pattern of hair distribution is observed on the torso, no stretch marks. Heart rate is 90/min., BP is 120/80 mm Hg, body build index equals 35. Blood sugar is 4,9 mmol/l, cholesterol is 6,2 mmol/l. On ophthalmoscopy: fundus of the eye without changes. What provisional diagnosis can be made?

1. **Primary alimentary constitutive obesity, android type**
2. Primary alimentary constitutive obesity, gynoid type
3. Secondary hypothalamic obesity
4. Secondary neuroendocrine obesity
5. Secondary endocrine hypo-ovarian obesity
6. A patient is very tall, has long thick fingers, big lower jaw and loppy lower lip. The increased secretion of which hormone and gland can be suspected?
7. **Somatotropin of adenohypophysis**.
8. Gonadotropin of adenohypophysis.
9. Antidiuretic hormone of neurohypophysis.
10. Thyroid hormones.
11. Glucocorticoids of adrenal glands.
12. A patient with external respiration dysfunctions needs tracheotomy. At the level of which cartilaginous tracheal retractions is the isthmus of thyroid localized the most often?
13. I - II.
14. Ill - IV.
15. **II - IV**.
16. IV-V.
17. V-VI.
18. Roentgenological examination of skull base bones revealed enlargement of sellar cavity, thinning of anterior clinoid processes, destruction of different parts, destruction of different parts of sella turcica. Such bone destruction might be caused by a tumour of the following wndocrinous gland:
19. **Hypophysis**
20. Epiphysis
21. Thymus gland
22. Adrenal glands
23. Thyroid gland
24. Some diseases reveal symptoms of aldosteronism with hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected on aldosteronism?
25. **Adrenal glands**
26. Testicle
27. Ovaries
28. Pancreas
29. Hypophysis
30. Under some diseases it is observed aldosteronism accompanied by hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected under aldosteronism?
    1. **Adrenal glands**
    2. Testicle
    3. Ovaries
    4. Pancreas
    5. Hypophysis