



Answer the following questions ? (each question in separate page)

I- Central nervous system (25 marks)

Q1) Mention the underlying mechanism of? (10 marks)

- A- Receptor potential
- B- Normal speech
- C- Referred pain

Q2) Describe the properties of stretch reflex? (5 marks)

Q3) Discuss the role of cerebellum in controlling of voluntary movements? (10 marks)

II - kidney (20 marks)

Q1) Explain the mechanism of micturition? (5 marks)

Q2) Define the renal plasma clearance and explain why the clearance of inulin is used for measuring the glomerular filtration rate? (5 marks)

Q3) Renal auto-regulation: definition and mechanisms? (10 marks)

III- Special senses (15 marks)

Q1) Explain the function of middle ear ossicles? (5 marks)

Q2) Discuss physiology of near vision & Explain presbyopia? (10 marks)

IV- Digestive system (15 marks)

Q1) Mention regulation of bile secretion? (5 marks)

Q2) Enumerate functions of HCL? (5 marks)

Q3) Ileocecal valve and sphincter: functions and control? (5 marks)

V- Endocrine& Reproduction (10 marks)

Q1) Mention the hormones controlling lactation? (5 marks)

Q2) Case study: (5 marks)

A 45-year-old woman comes in for her regular check-up and complains about a constant thirst and having to get up frequently in the night to urinate.

The patient has a history of high blood pressure. It is possible that she may be noncompliant with her medications because her blood pressure has remained high regardless of the medications she was prescribed or the dosage taken

Plasma Analysis:

VII- Choose the most probable answer: (30 marks)

1-The supraoptic nucleus of the hypothalamus is believed to control secretion of which of the following hormones?

- A. Antidiuretic hormone (arginine vasopressin)
- B. Oxytocin
- C. Growth hormone
- D. Adrenocorticotrophic hormone

2-The secretion of growth hormone is increased by

- A. Hyperglycemia
- B. Exercise
- C. Somatostatin
- D. Hypothermia

3- The source of estrogen and progesterone during the last seven months of pregnancy is the

- A. Ovary
- B. Placenta
- C. Corpus luteum
- D. Anterior pituitary

4-Iodides are stored in the thyroid follicles mainly in the form of

- A. Thyroxine
- B. Thyroglobulin
- C. Moniodotyrosine
- D. Diiodotyrosine

5-Receptor potential is characterized by:

- A- Presence of refractory period
- B- Does not obey all or none law
- C- Complete depolarization
- D- Cannot be summated

6-Almost all of the active thyroid hormone entering circulation is in the form of

- A. Triiodothyronine
- B. Thyroxine
- C. Thyroglobulin
- D. Thyrotropin

7-Ovulation is caused by a sudden increase in the secretion of

- A. Estrogen
- B. Progesterone
- C. LH
- D. FSH

8-The main control of glucocorticoids secretion:

- A- Thyrotropin
- B- ACTH
- C- TSH
- D- FSH

9- Steroid hormones Receptors are:

- A- Cell membrane receptors
- B- Nuclear receptors
- C- Cytoplasmic receptors
- D- Adrenergic receptors

10-Anterior pituitary hormone:

- A- Oxytocin
- B- Testosterone
- C- Prolactin
- D- Estrogen

11-The hormone involved in ejection of milk from a lactating mammary gland is

- A. Prolactin
- B. FSH
- C. LH
- D. Oxytocin

12-Modality discrimination is depend on:

- A- Number of receptors
- B- State of nerve centers
- C- Muller's low of specific nervous energy
- D- Weber-Fechner low

13-Cold receptors:

- A- Free nerve ending
- B- Pacinian corpuscles
- C- Encapsulated nerve endings
- D- Meissner's corpuscles

14-Plasma levels of calcium can be increased most rapidly by the direct action of parathyroid hormone on the

- A. Kidney
- B. Intestine
- C. Thyroid gland
- D. Bones

15-Somatomedins are released in response to:

- A- Thyroxin
- B- Insulin
- C- Growth hormone
- D- ACTH

16-The actions of insulin include

- A. Converting glycogen to glucose
- B. Stimulating gluconeogenesis
- C. Increasing plasma amino acid concentration
- D. Enhancing potassium entry into cells

17-Hyperparathyroidism decreases the plasma levels of

- A. Phosphate
- B. Sodium
- C. Calcium
- D. Potassium

18-Pituitary infantilism is due to:

- A- Deficiency of growth hormone before puberty
- B- Deficiency of growth hormone after puberty
- C- Deficiency of growth hormone and pituitary gonadotropins before puberty
- D- Deficiency of growth hormone and pituitary gonadotropins after puberty

19- Hyperthyroidism is characterized by

- A. Anorexia
- B. Increased basal metabolic rate
- C. Bradycardia
- D. Increased weight gain

20-Slow pain is characterized by:

- A- Acute and sharp pricking
- B- Arise from skin and deep tissues
- C- Well localized
- D- Transmitted by Neo-spinothalamic tract

21-Insulin-independent glucose uptake occurs in

- A. Adipose tissue
- B. Cardiac muscle
- C. Skeletal muscle
- D. The brain

22-A person with hypothyroidism would exhibit

- A. Tachycardia
- B. Increased metabolic rate
- C. Heat intolerance
- D. Sleepiness

23-Pain control at higher centers not include:

- A- Lentiform nucleus
- B- Hypothalamus
- C- Pain inhibitory complex
- D- Limbic system

24-A woman with a regular menstrual cycle of 28 to 30 days, ovulation would be expected to occur between

- A. Days 6 and 8
- B. Days 10 and 12
- C. Days 14 and 16
- D. Days 18 and 20

25-Which one of the following hormones initiates a biological effect by activation of cell membrane receptors?

- A. Progesterone
- B. Estrogens
- C. Cortisol
- D. Epinephrine

26-Hypotonia is present in :

- A- Chorea
- B- Parkinson's disease
- C- Hemibalismus
- D- Athetosis

27-Stimulation of primary motor area 4:

- A- Facilitatory to stretch reflex
- B- Hypotonia
- C- Positive Babinski's sign
- D- Inhibitory to superficial reflexes

28- Raphe Magnus nucleus secretes:

- A- Endorphin
- B- Enkephalin
- C- Serotonin
- D- Dopamine

29-The only pyramidal tract of the following:

- A-Rubrospinal tract
- B-Tectospinal tract
- C-Corticobulbar tract
- D-Reticulospinal tract

30- Thalamic syndrome not include:

- A- Thalamic hyperpathia
- B- Hypertonia
- C- Sensory ataxia
- D- Permanent loss of epicritic sensation

Kafrelsheikh University

Faculty of medicine

Physiology department



Second year Physiology Ex.

Time: Three hours

22/5/2018

- Glucose: 95 mg/dL (normal: 70-110 mg/dL)
- Ca⁺⁺: 9.2 mg/dL (normal: 8.4 to 10.2 mg/dL)
- Na⁺: 146 mEq/L (normal: 136 to 145 mEq/L)
- Cl⁻: 100 mEq/L (normal: 95-105 mEq/L)
- K⁺: 3.2 mEq/L (normal: 3.5 to 5.0 mEq/L)
- Plasma aldosterone (recumbent): 25 ng/dL (normal: 2-16 ng/dL)
- Plasma renin activity: 0.8 ng/mL/hr (normal: 1.9 to 3.7 ng/mL/hr)

- 1- Give proper diagnosis? (2 marks)
- 2- Why was her plasma renin level lower than normal? (1mark)
- 3- Why her blood pressure was remained high? (1 mark)
- 4- What acid- base abnormality did she have? (1 mark)

VII- Metabolism (10 marks)

Q1) Describe the effects of age &sex &dietetic habits &pregnancy on BMR? (5 marks)

Q2) Mention the role of hypothalamus in temperature regulation? (5 marks)

Oral exam

- ❖ From number 1 till 100 after written exam.
- ❖ From number 101 till the end of list at Wednesday 23/5/2018

Good luck

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Dr Hani Borg

باقى الأسئلة فى الخلف