الفرقة الثانية
فسيولوجي
دور أول

Sohag University
Faculty of Medicine
Physiology Department

Exam date:2018/05/20
Exam duration: 3 Hours
Exam total score: 100 Marks
Exam number of sectors: 6
Exam number of Pages: 4

2nd year Medical students – Final Physiology Exam

All the following question to be Answered
Please, Answers the questions in the sequence presented in exam paper.

Start of exam questions

I- Kidney and Metabolism

A- Give an account on glomerular filtrate; forces and factors affecting. **(10 Marks)**

B- Define respiratory quotient (RQ) and discuss its significance. **(5 Marks)**

II- Endocrine – Short notes,

A-Aldosteron hormone (mechanism of action and regulation). **(10 Marks)**

B-Antidiuretic hormone (action and mechanism of action) **(5 Marks)**

III- CNS – Short notes,

A- Synaptic plasticity. **(10 Marks)**

B- Manifestation of spinal Shock stage in complete transection of spinal cord. **(5 Marks)**

C- Aphasia (definition and types). **(5Marks)**

IV- Male reproduction and Eye

A- Compare between Testosterone and Dihydrotestosterone. **(8 Marks)**

B- Dark adaptation, Definition , phases and mechanisms. **(8 Marks)**

V- Female reproduction and Ear – Short notes,

A- Function and characters of the tympanic membrane. **(8 Marks)**

B- Definition and mechanism of ovulation. **(3 Marks)**

C- Actions of Relaxin Hormone. **(3 Marks)**

Please, follow exam on next page

VI- Mutiple Choice Questions (MCQs) **(20 Marks)**

1- Regarding the tubular reabsorption chooses the correct:

A. Glucose and Amino acid are reabsorbed in DT
B. Hco_3 can be reabsorbed nearly through all parts of the tubule
C. ADH decrease water permeability
D. All are correct

2- PAH clearance measures:

A. RPF
B. GFR
C. Urine out put
D. Tubular absorption

3- Which of the following substances doesn't have Tmax

A. Glucose
B. Amino acid
C. Water
D. All have Tmax

4- Which one of the following work inside the cell

A. Bicarbonate system
B. Phosphate system
C. All work inside the cell
D. None of above

5- The rate of H+ secretion is increased by:

A. Increased CO2 concentration
B. Decreased respiration
C. Increased metabolic rate
D. All of the above

6- The set point in temperature regulation control the body's response to changes in temperature is located in:

A. Posterior hypothalamus.
B. Spinal cord
C. Skin
D. Great veins.

7- As regards basal metabolic rate

A. Is higher in old age
B. Represents the energy expenditure during muscle exercise
C. Is decreased in myxedema
D. It is expressed as energy output/m2/day

Please, follow exam on next page

8- On exposure to hot humid atmosphere:

A. sweat secretion is inhibited.
B. Vasodilation occurs in the skin blood vessels.
C. Sweat evaporation increases.
D. The muscle tone and secretion of thyroxin tend to increase.

9- A patient was diagnosed with hypothyroidism. A decrease in the following laboratory values would be expected except:

A. Plasma cholesterol.
B. Free T4
C. HB%.
D. Vitamin A.

10- One of the following would be expected to cause Inhibition of iodide pump?

A. Decreased synthesis of T4.
B. Decreased synthesis of thyroglobulin.
C. Decreased metabolic rate.
D. Decreased TSH

11- The function of which of the following is increased by an elevated parathyroid hormone concentration?

A. Excitability of the MEP.
B. Phosphate reabsorption by renal tubules.
C. Renal formation of 1, 25 dihydroxycholecalcifarol.
D. Osteoblasts.

12- The hormone secreted by the parafolliculer cells of thyroid gland is

A. Vitamin D.
B. Parathormone.
C. 7-Dehydrocholesterol
D. Calcitonin.

13- Regarding the posterior pituitary gland which of the following is correct

A. It is connected with hypothalamus by nervous connection.
B. It secretes prolactin hormone.
C. It secretes oxytocin hormone.
D. Its disturbance may lead to diabetes mellitus.

Please, follow exam on next page

14- Which one of the following structures is not considered to be part of the basal ganglia?

A. Putamen.
B. Dentate nucleus.
C. Caudate nucleus.
D. Substantia nigra.

15- Which of the following neurotransmitters is used by the axons of substantia nigra neurons that project to caudate and putamen?

A. GABA.
B. Serotonin.
C. Nor epinephrine.
D. Dopamine.

16- Regarding causes of Nystagmus one of the following is correct

A. Parkinsonism.
B. Tabes dorsalis.
C. Lesion in visual pathway.
D. Neocerebeller syndrome.

17- Concerning Muscle Spindle one of the following is correct

A. It is the receptor for withdrawal reflex.
B. It has afferent nerve supply only.
C. It has efferent nerve supply only.
D. It is the receptor for muscle tone.

18- Concerning spinal cord reflexes one of the following is correct.

A. Micturation reflex is somatic deep reflex.
B. Stretch reflex is somatic deep reflex.
C. Planter reflex is somatic deep reflex.
D. Vasomotor tone is superficial somatic reflex.

19- Chronic intake of exogenous testosterone to a normal adult male will lead to all of the following except

A. Increase skeletal muscle bulk
B. Increase semen production
C. Increase sperm number
D. Increase libido

20- Testosterone is essential for all of the following except

A. Testis formation
B. Epididymis formation
C. Sperm production
D. Male behavioral patten

End Of Exam questions – Good Luck

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Sohag University
Faculty of Medicine
Physiology Department

Exam date:2018/08/12
Exam duration: 3 Hours
Exam total score: 125 Marks
Exam number of sectors: 6
Exam number of Pages: 4

2nd year Medical students – Final Physiology Exam

All the following question to be Answered
Please, Answers the questions in **the sequence** presented in exam paper.

Start of exam questions

I- Kidney and Metabolism
- A- Give an account on glomerular filtrate; forces and factors affecting. **(10 Marks)**
- B- Tubular transport maximum. **(5 Marks)**
- C- Regulation of body temperature on exposure to cold weather. **(10 Marks)**

II- Endocrine – Short notes,
- A- Calcium homeostasis. **(10 Marks)**
- B- Glucagon hormone (actions and regulation). **(5 Marks)**

III- CNS – Short notes,
- A- Compare in table between slow and fast pain. **(10 Marks)**
- B- Servocomparator function of the cerebellum. **(5 Marks)**
- C- Area 6. **(5 Marks)**

IV- Male reproduction and Eye
- A- Factors affecting Spermatogenesis ? **(10 Marks)**
- B- Conditions (causes) which produce pupilloconstriction (Miosis) ? **(10 Marks)**

V- Female reproduction and Ear – Short notes,
- A- Human chorionic gonadotropin. **(5 Marks)**
- B- Non reproductive function of estrogen. **(5 Marks)**
- C- Travelling wave theory. **(5 Marks)**
- D- Attenuation reflex. **(5 Marks)**

VI- Multiple Choice Questions (MCQs) **(25Marks)**

1- Which of the following organs is the primary sex organ in human male;
A-Penis B- Scrotum C-Testis D-Prostate

2- Regarding Synaptic delay which of the following is correct?
A. It is spent in release of synaptic transmitter by post synaptic terminals.

Please, follow exam on next page

B. Can be used to determine the number of synapses pathway
C. Diffusion of synaptic transmitter into the surrounding tissues.
D. Inactivation of synaptic transmitters by specific enzymes.

3- Regarding the character of sensory receptors which of the following is correct?

A. Each receptor can be stimulated by any type of stimuli.
B. Adaptation can occur in all receptors with the same degree.
C. Fatigue can occur by repeated stimulation.
D. The receptor can generate an action potential by specific stimulus

4- Concerning stretch reflex which of the following is correct?

A. Its center is the alpha motor neuron of spinal cord segments.
B. Its receptor is golgi tendon organ.
C. It is a poly synaptic reflex.
D. Its center is the gamma motor neuron of spinal cord segments.

5- Opening of liganed-gated Cl- channels causes:

A. Depolarization of postsynaptic neuron
B. Initiation of an action potential.
C. Block of all liganed-gated cation channels
D. Inhibition of postsynaptic neuron.

6- All of the followings Stimulate milk ejection EXCEPT;

A. Prolactin B. Oxytocin.
C. Suckling. D. Milk let-down reflex

7- Concerning releasing hormones produced in the hypothalamus the followings are true EXCEPT;

A. Are secreted by cells in the median eminence.
B. May control the output of more than one pituitary hormone.
C. Regulate the release of oxytocin
D. Regulate the release of thyrotropin.

8- Human sperm are able to move in;

A. Testis B.Vagina C. Epididymis **D.** Prostate

9- Where does fertilization most often occur?

A. Oviduct B. Ovary C. Cervix D. Uterus

Please, follow exam on next page

10 - Which compartment of the cochlea contains the organ of Corti?

A. Scala tempani. B. saccule
C. Scala media D. Scala vestibuli

11- Concerning hormones secreted by the adrenal cortex all the followings are true EXCEPT:

A. Are mostly bound to plasma proteins.
B. Are essential for the maintenance of life
C. Include sex hormones.
D. Are excreted mainly in the bile after conjugation.

12- Regarding Insulin the followings are true EXCEPT;

A. Stimulates uptake of free fatty acids by adipose tissue.
B. Secretion tends to raise the plasma potassium level.
C. Facilitates entry of glucose into skeletal muscle
D. Secretion is increased by vagal nerve activity

13- The hormone secreted by the parafollicular cells of thyroid gland is;

A. Vitamin D.. B.Parathormone.
C. 7-Dehydrocholesterol D. Calcitonin

14- Stimulation of the eye by light will lead to;

A. Sodium influx into the photoreceptor
B. Stoppage of Na influx into of photoreceptor
C. Potassium outflow of the photoreceptor
D. Closure of Voltage gated Na channel in the photoreceptor

15- Cutting the crossed fibers at optic Chiasma will lead to,

A. Total loss of vision in both eyes
B. Loss of temporal portion of visual field in both eyes
C. Right homonymous hemianopia
D. Loss of nasal portions of visual field in both eyes

16- Sensory information from receptors reach all the following sites EXCEPT:

A. Basal Ganglia. B. Cerebellum.
C. Thalamus. D. Spinal cord.

17- Specific dynamic action of food is highest for:

A. Fat. B. Proteins C. Carbohydrates. D. Mixed food

Please, follow exam on next page

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18- Maintenance of the corpus luteum during the first 8 weeks of pregnancy is dependent on which of the following hormones?

A. Estrogen B. Progesterone C. hCG D. DHEA

19- Depolarization of the hair cells in the cochlea is caused primarily by the flow of

A. Ca2+ into the hair cell.
B. Na+ into the hair cell
C. Cl- out of the hair cell.
D. K+ into the hair cell

20- The following are involved in the mechanism of fever:

A. Increased production of interleukin – 1.
B. Vasodilatation of the skin blood vessels.
C. Increased production of prostaglandins.
D. Both A & C are correct.

21- If the clearance of a freely filterated substance is less than that of inulin,

A. There is net reabsorption of the substance in the tubules.
B. There is net secretion of the substance in the tubules.
C. The substance is neither secreted nor reabsorbed in the tubules.
D. The substance becomes bound to protein in the tubules.

22- The renal epithelial cells reabsorb Na from the basolateral membrane via:

A. Na-Cl co-transport
B. Na/H counter –transport
C. Na/Glucose co-transport.
D. Na/K ATPase pump.

23- Regarding transport of glucose by renal tubules:

A. In a healthy person, the distal tubules reabsorb all of the filtered glucose.
B. Glucose is normally secreted in urine in small quantities.
C. Glucose transport by the renal tubules is linked to sodium transport.
D. The transport maximum for glucose (TmG) is about 36 mg / min.

24- As a result of increased arterial blood pressure to 150 mmHg:

A. The renal blood flow increase markedly.
B. The GFR decrease markedly.
C. Both RBF & GFR are kept nearly constant.
D. None of the above is correct.

25- loss of Hco3 will lead to:

A. Metabolic acidosis.
B. Metabolic alkalosis.
C. Respiratory acidosis.
D. Respiratory alkalosis

End of Exam questions – Good Luck