RAN-2006000101020002

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First MBBS Examination November - 2023

Physiology : Paper - II

Set - 2

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

(1) **નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.**
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ **First MBBS (Physiology - 2)**

Name of the Subject :

☛ **Physiology : Paper - II - Set - 2**

Subject Code No.: **2006000101020002**

Seat No.:

Student's Signature

Section - A **20 Marks**

1) Proprioceptive sensation is lost if there is damage to :
   a) Dorsal column
   b) Cerebellum
   c) Motor cortex
   d) Basal ganglia

2) All are features of upper motor neuron lesion EXCEPT :
   a) Hypertonia
   b) Muscle wasting
   c) Babinski's sign is positive
   d) Large number of muscles are involved

3) All are characteristics of EPSP (exciatory post synaptic potential) EXCEPT :
   a) It is a local potential
   b) It follows all or none law
   c) It cannot propogate
   d) It does not have refractory period

4) Which type of inhibition is most commonly present in cerebellum

a) Direct synaptic inhibition
b) Renshaw cell inhibition
c) Feed forward inhibition
d) Presynaptic inhibition

5) Resting membrane potential of a large myelinated nerve is :

a) –10 m V
b) – 55 m V
c) – 90 m V
d) + 55 m V

6) Parkinsonism is caused due to damage to :

a) Cerebellum
b) Hypothalamus
c) Spinal cord
d) Basal Ganglia

7) Formation of blood brain barrier is function of :

a) WBC
b) Oligodendrocyte
c) RBC
d) Astrocytes

8) Hormones produced by Hypothalamus are all EXCEPT :

a) Thyroid releasing hormone
b) Growth hormone releasing hormone
c) Corticotropin releasing hormone
d) Follicle stimulating hormone

9) Oxytocin is secreted by :

a) Paraventricular nucleus
b) Supra optic nucleus
c) Anterior nucleus
d) Posterior nucleus

10) All are hyperglycemic hormones EXCEPT :

a) Growth hormone
b) Cortisol
c) Thyroid hormone
d) Insulin

11) Osteoclasts have specific receptors for :

a) Parathyroid hormone
b) Calcitonin
c) 1,25 dihydroxycholecalciferol
d) Insulin

12) Aldosterone escape is :

a) Escape from the salt and water retaining effect of aldosterone

b) Escape of aldosterone from the stimulating effect of ACTH

c) Escape from the natriuretic effect of aldosterone

d) Escape of aldosterone from the stimulating effect of CRH

13) Testosterone is synthesized by :

a) Sertoli cells b) Mucus cells

c) Leydig cells d) Germ cells

14) Sperms acquire motility when they pass through :

a) Epididymis b) Vas deference

c) Uterus d) Seminiferous tubules

15) Source of progesterone during normal menstrual cycle is :

a) Stroma b) Surface epithelium of ovary

c) Corpus luteum d) Endothelial cells

16) Which hormone is dominant in luteal phase of menstrual cycle :

a) Prolactin b) Oxytocin

c) Estrogen d) Progesterone

17) The receptors for bitter taste are located at :

a) Tip of tongue b) Behind tip of tongue

c) Sides of tongue d) Posterior part of tongue

18) Primary visual cortex lies in which part of cerebral cortex :

a) Occipital lobe b) Temporal lobe

c) Frontal lobe d) Parietal lobe

19) Which of the following retinal cells generate action potential :

a) Bipolar cells b) Amacrine cells

c) Ganglionic cells d) Horizontal cells

20) Which part of CNS play important role in temperature regulation :

a) Reticular activating system b) Spinal cord

c) Cerebellum d) Hypothalamus

Section - B 40 Marks

1. **Case based question.** **(10 marks)**

History :

A 53 year old female patient complains of progressive weight gain of 8 kg in 1 year, fatigue, loss of memory, slow speech, deepening of her voice, dry skin, constipation, and cold intolerance.

Physical examination :

Vital signs include a temperature 96.8°F, pulse 58/minute and regular, BP 100/60. She is obese and speaks slowly and has a puffy face, with pale, cool, dry, and thick skin. The deep tendon reflexes are slow and reflex time is delayed. The serum T4 concentration is lower than normal value, the serum TSH is higher than normal value.

Questions :

1) What is the most likely diagnosis of the above clinical case? (1)

2) Which lab investigations, from the above case, support your diagnosis? (2)

3) What is the etiology (causes) of the condition? (2)

4) What are the clinical features related to the above condition? (5)

2. **Notes. (3 out of 4)** **(15 marks)**

1) Spinothalamic tract

2) Apoptosis

3) Role of hypothalamus in temperature regulation

4) Hypermetropia

3. **Short notes. (5 out of 6)** **(15 marks)**

1) Sertoli cells

2) Ovarian cycle

3) Parkinsonism

4) Regeneration of neuron

5) Endogenous pain inhibiting mechanism

6) Erlanger Gasser classification of nerve

Section - C 40 Marks

1. **Structured LAQ.** **(10 marks)**
   1) Describe mechanism of hearing with suitable diagram. (8)
   2) Write a note on types of deafness. (2)

2. **Notes. (3 out of 4)** **(15 marks)**
   1) Functions of Growth hormone.
   2) Normal sleep waves.
   3) Properties of reflexes.
   4) Receptor potential.

3. **Short notes. (5 out of 6)** **(15 marks)**
   1) Occlusion.
   2) Tests for ovulation.
   3) Acromegaly.
   4) Ionic basis of depolarization and repolarisation in neuron action potential.
   5) Visual adaptation.
   6) Aqueous humor.