

VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM**MBBS DEGREE EXAMINATION – October 2019****First Year****HUMAN PHYSIOLOGY INCLUDING BIOPHYSICS - PAPER II****SECTION A****Time: Fifteen Minutes****Maximum: 15 marks****Register Number :**

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Signature of the candidate**Signature of the Invigilator****Instructions to the candidates**

1. Write your Register Number and sign at the place specified on the first page of this Question Booklet.
2. Do not open this question booklet until Invigilator announces the commencement of the examination.
3. Answer ALL the Fifteen questions. They carry equal marks. No negative marking for wrong answers.
4. Answers should be marked legibly in the SHEET provided in capital letters.
5. THE QUESTION BOOKLET SHOULD NOT BE TAKEN OUT OF THE EXAMINATION HALL.
6. Questions should not be copied and taken out of the Examination Hall. Any one found violating this rule shall not be permitted to write the examination and shall be sent out of the Hall.
7. At the end of 15 minutes, when the Invigilator announces 'STOP WRITING' you must stop writing immediately. If the candidate tries to attempt to answer the questions after the prescribed time, their answer script becomes invalid.
8. Hand over the questions booklet containing answer sheet to the invigilator when you finish answering or immediately after 15 minutes.

HUMAN PHYSIOLOGY INCLUDING BIO PHYSICS - PAPER I
SECTION-A (15X1-15 MARKS)
(Multiple choice questions)

Time: Fifteen Minutes

Maximum: 15 marks

Select the most appropriate response:

1. Identify the incorrect statement with regard to ventilation – perfusion ratio In lungs.
 - A. It is more at the apex than at the base
 - B. Ventilation is more at the base than at the apex
 - C. Increased V_A/Q ratio leads to physiological shunt
 - D. Blood flow is greater at the base than at the apex.

2. Influence of Carbon dioxide on the release of CO_2 and uptake of Oxygen is.....
 - A. Bohr's effect
 - B. Haldane's effect
 - C. Chloride shift
 - D. Reverse chloride shift

3. Sympathetic stimulation causes bronchodilation by action through:
 - A. α_1 Receptors
 - B. β_1 Receptors
 - C. α_2 Receptors
 - D. β_2 Receptors

4. The maximum volume of air that a person can expel from the lungs after a deep inspiration is called :
 - A. Functional residual capacity
 - B. Inspiratory capacity
 - C. Vital capacity
 - D. Expiratory capacity

5. The percentage of blood ejected from the ventricle is called as:
 - A. Ejection fraction
 - B. End diastolic volume
 - C. End systolic volume
 - D. Cardiac index

6. Which of the following is not true about heart block?
 - A. Damage in the special conducting tissues
 - B. Impairment of impulse transmission
 - C. Abnormal rhythm generation from SA node
 - D. Excessive prolongation of PR interval

7. Stretching of great veins results in increased heart rate. This relationship is best explained by :
 - A. Bainbridge reflex
 - B. Marey's reflex
 - C. BezoldJarish reflex
 - D. Cushing's reflex

8. Total denervation of heart (both sympathetic and parasympathetic) results in:
 - A. Bradycardia
 - B. Heart rate around 100/min
 - C. Cardiac arrest
 - D. No change in normal heart rate

9. Stretch reflex:
 - A. Is a monosynaptic reflex
 - B. Results from excitation of Golgi tendon organs in the muscle tendon region
 - C. Protects the individual by withdrawing the limb
 - D. Causes contraction of contralateral flexor muscle

10. Weber-Fechner law explains which of the following properties of a receptor?
 - A. Law of projection
 - B. Intensity discrimination
 - C. Adaptation
 - D. Doctrine of specific nerve energy

11. Endogenous opioid analgesic pathway passes through the following parts except:
 - A. Periaqueductal grey matter
 - B. Magnus Raphe nucleus
 - C. Hypothalamus
 - D. Substantia gelatinosa of Rolando

12. Symptoms of cerebellar lesion in human being include all of the following except.....
 - A. Resting tremor
 - B. Ataxia
 - C. Dysmetria
 - D. Hypotonia

13. Horizontal cells in the retina produces:

- A. Hyperpolarizing potential
- B. Depolarizing potential
- C. Generator potential
- D. Biphasic action potential

14. In human brain, primary auditory cortex is located in:

- A. Posterior part of occipital lobe
- B. Superior part of temporal lobe
- C. Post central gyrus
- D. Prefrontal area

15. Which of the following is not the feature of cochlear microphonic potential?

- A. It is a graded potential
- B. It does not obey all or none law
- C. It has a latent period
- D. It progresses to form action potential

(Sl.No. M21920)

VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM**MBBS DEGREE EXAMINATION – October 2019****First Year****HUMAN PHYSIOLOGY INCLUDING BIO PHYSICS – PAPER II**

Time : Three hours

Maximum : 80 marks

Answer ALL Questions

Answer Section A in the Answer Sheet attached to it 15 marks – 15 minutes to be handed over to the invigilator immediately after 15 minutes

Answer Section B in the same answer book

Time : 2 hours 45 minutes

SECTION – B

Maximum : 65 marks

I. Write essays on:**(2 x 15=30)**

1. Describe the structure, connections and functions of Basal Ganglia. Add a note on Parkinson's syndrome and its remedy. (2+3+5+4+1)
2. Define cardiac output, give normal values, and describe the factors regulating cardiac output. Describe one method for measurement of cardiac output. (1+2+7+5)

II. Write short notes on:**(5 x 5=25)**

3. Mechanism of accommodation in eye
4. Olfactory pathway and physiology of olfaction
5. Central and peripheral chemoreceptors in respiratory regulation
6. Dysbarism or Caisson disease
7. Synaptic inhibitions

III. Write briefly on:**(5x2=10)**

8. Impedance matching
9. FEV1 & FEV2
10. Heart block
11. Referred pain
12. Aphasia

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