

Date of issue :	Centre :
Sup. Sign. :	Seat No. :

ND-2006000101020002-O Seat No. _____

First Year M. B. B. S. Examination

January - 2022

Physiology : Paper - 2

Time : Hours

[Total Marks : 20

Instruction :

1. Fill up the details of the signs on your answer book.
 Name of the Examination : _____
 First Year M. B. B. S. _____
 Name of the Subject : _____
 Physiology : Paper - 2 _____
 Subject Code No. : _____
 Section No. (1, 2,) : **Nil**
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Seat No. : _____
 Student's Signature _____

Section A MCQs

20 marks

1. Which taste sensation is the most sensitive (has the lowest stimulation threshold)?
a. Acid b. Bitter c. Salty d. Sour
2. Which of the following best describes the "blind spot" of the eye?
a. Located 5 degrees lateral to the central point of vision
b. The exit point of the optic nerve
c. Contains only rods and thus has monochromatic vision
d. Contains no blood vessels
3. After olfactory receptor cells bind odor molecules, a sequence of intracellular events occurs that culminates in the entrance of specific ions that depolarize the olfactory receptor cell. Which ions are involved?
a. Calcium b. Chloride c. Hydrogen d. Sodium
4. Which of the following middle ear ossicle is attached to the tympanic membrane?
a. Columella b. Incus c. Malleus d. Modiolus

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5. Olfactory receptor cells belong to which group of cells?
a. Bipolar neurons
b. Fibroblasts
c. Modified epithelial cells
d. Multipolar neurons

6. Interneurons that utilize the neurotransmitter enkephalin to inhibit afferent pain signals are most likely to be found in which region of the central nervous system?
a. Dorsal horn of spinal cord
b. Postcentral gyrus
c. Precentral gyrus
d. Ventral horn of spinal cord

7. Which type of papillae is located in the posterior part of the tongue?
a. Circumvallate
b. Foliate
c. Fungiform
d. Fungiform and circumvallate

8. The processing of short term memory to long term memory is done in :
a. Prefrontal cortex
b. Hippocampus
c. Neocortex
d. Amygdala

9. Which of the following thalamic nuclei acts as a relay for transmission of Auditory information
a. Dorsomedial
b. Lateral geniculate
c. Medial geniculate
d. Ventral posterolateral

10. A 17-year-old boy sustains serious head and neck trauma during a football game. Physical examination shows a positive Babinski sign. Which of the following is most likely to be damaged in this boy?
a. Anterior motor neurons
b. Cerebellum
c. Corticospinal tract
d. Premotor cortex

11. Within minutes after a normal delivery, flow through the foramen ovale decreases dramatically. What is the cause of this change?
a. Increased formation of prostaglandin E2 (PGE2) in the endocardium
b. Increased rate of flow through the pulmonary artery
c. Increased left atrial pressure
d. Increased right atrial pressure

12. For male differentiation to occur during embryonic development, testosterone must be secreted from the testes. What stimulates the secretion of testosterone during embryonic development?
a. LH from the maternal pituitary gland
b. HCG
c. Inhibin from the corpus luteum
d. GnRH from the embryonic hypothalamus

13. Why do infants of mothers who had adequate nutrition during pregnancy not require iron supplements or a diet rich in iron until about 3 months of age?

- a. Growth of the infant does not require iron until after the third month
- b. The fetal liver stores enough iron to meet the infant's needs until the third month
- c. Synthesis of new red blood cells begins after 3 months
- d. Muscle cells that develop before the third month do not contain myoglobin

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14. What accompanies sloughing of the endometrium during the endometrial cycle in a normal woman?

- a. An increase in progesterone
- b. The LH "surge"
- c. A decrease in both progesterone and estrogen
- d. An increase in estradiol

15. Which of the following increases secretion of GH?

- a. Senescence
- b. Insulin-like growth factor-I
- c. Somatostatin
- d. Hypoglycemia

16. Which hormone is largely unbound / least bound to plasma proteins?

- a. Cortisol
- b. T₄
- c. ADH
- d. Estradiol

17. A 24-year-old student goes hiking in the Thar Desert during summer break. The environmental temperature is 105°F and the relative humidity is 20 percent. Which option best describes the major mechanism of heat loss in this student?

- a. Conduction to air
- b. Conduction to objects
- c. Convection
- d. Evaporation

18. Most of the energy for strenuous exercise that lasts for more than 5 to 10 seconds but less than 1 to 2 minutes comes from what source?

- a. ATP
- b. Anaerobic glycolysis
- c. Oxidation of carbohydrates
- d. Oxidation of lactic acid

19. Parasympathetic neurons

- a. Originate in the brain stem and then run via the vagus to the paravertebral ganglia
- b. Release noradrenaline at their terminals which in turn activates adrenergic receptors
- c. Cause vasodilatation in the blood vessels of the external genitalia
- d. Coordinate the so-called 'flight or fight' response

20. The neurotransmitter released by axon terminals of preganglionic sympathetic fibre is

- a. Acetylcholine
- b. Noradrenaline
- c. Epinephrine
- d. Dopamine

