

ATAL BIHARI VAJPAYEE MEDICAL UNIVERSITY, LUCKNOW
MBBS DEGREE EXAMINATION - 1st PROF PROFESSIONAL
SUPPLEMENTARY EXAM - MARCH 2024

PHYSIOLOGY - PAPER – I

SECTION A - Multiple Choice Questions (MCQs)

PAPER CODE: 2421130002

SET: A

Note: Choose one correct answer in the OMR sheet provided. No overwriting should be done.

Time: 20 Minutes

(20 x 1 = 20 MARKS)

1. Under normal respiratory conditions, the greatest resistance to airflow occurs in:

- a) Alveolar duct
- b) Nose
- c) Large bronchi
- d) Terminal bronchiole

2. The difference in the amount of oxygen present in 100 ml of arterial blood and 100 ml of venous blood at rest is approximately:

- a) 20 ml
- b) 5 ml
- c) 19.4 ml
- d) 14.4 ml

3. J receptors are situated in:

- a) Heart

- b) Blood vessels
- c) Alveolar interstitium
- d) Carotid body

4. Tall T waves of ECG are associated with:

- a) Hypernatremia
- b) Hypokalemia
- c) Hyponatremia
- d) Hyperkalemia

5. The velocity of transmission is fastest through which part of the heart?

- a) AV node
- b) Bundle of His
- c) Atria
- d) Purkinje fibers

6. The substance essential for the transfer of fatty acids across the mitochondrial membrane:

- a) Co-enzyme A
- b) Creatinine
- c) Creatine
- d) Carnitine

7. The biggest cell in the bone marrow is:

- a) Reticulocytes
- b) Megakaryocytes
- c) Erythrocytes

d) Metamyelocytes

8. Which cells of the gastric mucosa secrete pepsinogen?

a) Zymogen cells

b) Goblet cells

c) Parietal cells

d) Argentaffin cells

9. ECF volume is measured by using:

a) Insulin

b) Inulin

c) Evans blue

d) D₂O

10. The all-or-none response in a nerve is applicable to:

a) A sensory nerve

b) A mixed nerve

c) A single nerve fiber

d) A motor nerve

11. Which of these is NOT a part of the extracellular matrix?

a) Fibronectin

b) Laminin

c) Collagen

d) Integrins

12. The nerve fiber easily blocked by local anesthetics is:

- a) A beta
- b) C type
- c) A alpha
- d) A gamma

13. Hyperbaric oxygenation is useful in all EXCEPT:

- a) Congenital heart disease
- b) Gas gangrene
- c) Nitrogen toxicity
- d) CO-poisoning

14. The first reactive change to occur after hemorrhage is:

- a) Tachycardia
- b) Vasoconstriction
- c) Raised cortisol
- d) Raised epinephrine

15. Which of the following can be measured by using the helium dilution method?

- a) Functional residual capacity
- b) Tidal volume
- c) Dead space
- d) Total lung volume

16. The increase in vascular permeability responsible for 'wheal' formation in the triple response is due to:

- a) Serotonin
- b) Acetylcholine
- c) Histamine
- d) Adrenaline

17. Which one of the following tissues has gap junctions?

- a) Cardiac muscles
- b) Skeletal muscles
- c) Neurons
- d) Epithelial cells

18. Thick filaments in skeletal muscle are composed of:

- a) Troponin
- b) Actin
- c) Myosin
- d) Tropomyosin

19. Which of the following techniques is used to study current flow across a single ion channel?

- a) Patch-clamp
- b) Voltage-clamp
- c) Ionophoresis
- d) Galvanometry

20. Which of the following does not stimulate the peripheral chemoreceptor?

- a) Hypoxia
- b) Hypocapnia

- c) Acidosis
- d) Convulsion

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