

KASHMIR INSTITUTE

OF EXCELLENCE

ONE SHOT REVISION

(ZOOLOGY)

TOPIC: BREATHING

Q1. Trachea divides into right and left bronchi at
the thoracic vertebra.

(1) 4

(2) 5

(3) 6

(4) 7

Q2. Total percentage of O₂ transported by haemoglobin or RBC is:

(1) 3%

(2) 97%

(3) 49%

(4) 100%

Q3. Which of the following muscles are involved in forceful expiration?

- (1) Abdominal diaphragm muscles.
- (2) External intercostal and diaphragm muscles.
- (3) Abdominal and internal intercostal muscles.**
- (4) External and internal intercostal muscles.

Q4. Match the column:

Column A	Column B
A. Tidal volume	1. TV + IRV
B. Inspiratory reserve volume	2. ERV + IV + IRV
C. Vital lung capacity	3. 500 ml
D. Inspiratory capacity	4. 2500-3000 ml

(1) A – 3, B – 4, C – 2, D – 1

(2) A – 3, B – 4, C – 1, D – 2

(3) A – 4, B – 2, C – 1, D – 3

(4) A – 4, B – 3, C – 2, D – 1

Q5. How many following structures of respiratory tract are supported by cartilaginous rings?

Trachea, Primary bronchi, Secondary bronchi, Tertiary bronchi, Initial bronchioles, Terminal bronchioles, Respiratory bronchioles, Alveoli.

(1) 1

(2) 4

(3) 5

(4) 7

Q6. Statement-I: Pons contains Pneumotaxic centre which has the ability to moderate the function of respiratory rhythm centre.

Statement-II: Neural signals from Pneumotaxic centre alter the respiratory rate.

- (1) Both statements are incorrect.
- (2) Both statements are correct.**
- (3) Statement-I is correct & II-incorrect.
- (4) Statement-I is incorrect & II-correct.

Q7. Statement-I: 100ml of oxygenated blood delivers approximately 4ml of CO₂ to the alveoli.

Statement-II: CO₂ is mainly transported in the form of carbamino haemoglobin.

- (1) Both statements are correct.
- (2) Both statements are incorrect.
- (3) Statement-I is correct and statement-II is incorrect.**
- (4) Statement-II is correct and statement-I is incorrect.

Q8. How many molecules of O_2 are transported by a haemoglobin molecule?

(1) 1

(2) 2

(3) 3

(4) 4

Q9. Which of the following pulmonary volume cannot be directly measured by spirometer?

(1) TV

(2) IRV

(3) ERV

(4) RV

Q10. How many statements are incorrect:

I. Lungs are covered by a double layered pleura.

II. Outer pleural membrane is in close contact with lungs while as inner pleural membrane with thoracic lining.

III. Region from external nostrils to terminal bronchioles is called as respiratory zone.

IV. Region from respiratory bronchioles to alveoli is called conducting zone.

(1) 1

(2) 2

(3) 3

(4) 4

Q11. When diaphragm contracts during inspiration thoracic volume increases in:

- | | |
|---------------------------|-------------------------|
| (1) Dorsal ventral axis | (2) Dorsal lateral axis |
| (3) Antero-posterior axis | (4) Antero-lateral axis |

Q12. Partial pressure (in mmHg) of CO₂ in atmospheric air, alveoli, deoxygenated blood, oxygenated blood and tissues are-

(1) 0.3, 40, 45, 40, 45

(2) 40, 45, 40, 45, 0.3

(3) 40, 40, 45, 45, 0.3

(4) 0.3, 45, 45, 40, 40

Q13. The breathing rhythm is generated in the _____ and is influenced by variation in levels of _____ in the blood:

(1) Medulla, CO_2

(2) Medulla, O_2

(3) Frontal lobe, CO_2 , O_2

(4) Frontal lobe, CO_2

Q14. Receptors in wall of arch of aorta and carotid artery are mainly sensitive for:

(1) O₂ and CO₂

(3) CO₂ and H⁺

(2) Temperature and H⁺

(4) CO₂ and temperature

Q15. Thoracic chamber is formed (A) by the vertebral column, (B) by the sternum, (C) by the ribs and on the (D) Side by the dome shaped diaphragm. Identify A, B, C & D?

- (1) A – dorsally, B – ventrally, C- laterally, D-posteriorly.
- (2) A – ventrally, B- laterally, C – dorsally, D-posteriorly.
- (3) A – Laterally, B- ventrally, C- dorsally, D- anteriorly.
- (4) A- dorsally, B- laterally, C- ventrally, D-posteriorly.

Q16. Which of the following statement is incorrect?

- (1) Diffusion membrane is made up of 3-major layers.
- (2) Solubility of CO₂ is higher than O₂ by 25 times.
- (3) Breathing volumes are estimated by spirometer.
- (4) High concentration of hydrogen ions favours oxyhaemoglobin formation.

Q17. Which one of the following statements is incorrect?

- (1) Total volume of air a person can expire after a normal inspiration is called expiratory capacity.
- (2) Binding of oxygen with haemoglobin is primarily related to partial pressure of CO_2 .
- (3) Every 100 ml of deoxygenated blood delivers approximately 4 ml of CO_2 to the alveoli.
- (4) Diffusion at alveolar level is directly related to partial pressure difference of a gas.

Q18. Respiratory rhythm center is located in:

(1) Cerebellum

(2) Cerebrum

(3) Hypothalamus

(4) **Medulla oblongata**

Q19. CO_2 dissociates from carbaminohaemoglobin when

- (1) $p\text{CO}_2$ is high and $p\text{O}_2$ is low.
- (2) $p\text{O}_2$ is high $p\text{CO}_2$ is low.
- (3) $p\text{CO}_2$ is high and $p\text{O}_2$ are equal.
- (4) none of the above.

Q20. Oxygen dissociation curve is:

(1) Sigmoid

(2) Parabolic

(3) Hyperbolic

(4) Straight line

Q21. Under normal physiological conditions, every 100 mL of oxygenated blood delivers about i of O_2 to the ii and every 100 mL of deoxygenated blood delivers about iii of CO_2 to the iv.

The information in which alternative completes the given statement?

- (1) i-4 mL; ii-tissues; iii-5 ml; iv-alveoli.
- (2) i-5 mL; ii-tissues; iii-4 ml; iv-alveoli.
- (3) i-4 mL; ii- alveoli; iii-5 ml; iv-tissues.
- (4) i-5 mL; ii- alveoli; iii-4 ml; iv-tissues.

Q22. Fishes and earthworms have _____ and _____ as the respiratory organ/structure respectively:

(1) Gills; moist cuticle

(3) Gills; trachea

(2) Moist cuticle; gills

(4) Trachea; gills

Q23. The rate of breathing in a normal healthy human is:

(1) 12-16 times/minute

(2) 16-32 times/minute

(3) 2-6 times/minute

(4) 2-3 times/minute

Q24. During expiration, the diaphragm becomes:

(1) normal

(2) flattened

(3) dome-shaped

(4) oblique

Q25. Which of the following options correctly represents the lung conditions in asthma and emphysema, respectively?

- (1) Increased respiratory surface; Inflammation of bronchioles.
- (2) Increased number of bronchioles; Increased respiratory surface.
- (3) Inflammation of bronchioles; Decreased respiratory surface.**
- (4) Decreased respiratory surface; Inflammation of bronchioles.