Yakeen NEET 2.0 2026

Zoology By Samapti Sinha Ma'am

Breathing and Exchange of Gases

DPP: 5

Q1 Wheezing due to inflammation of bronchi and bronchioles seen in;
(A) Pneumonia (B) Asthma
(C) Tuberculosis (D) Bronchitis

Q2 Match **List-I** with **List-II**:

	List-I		**List-II**
(A)	Asthma	(I)	CO_2 and hydrogen ions
(B)	Emphysema	(II)	Inflammation of bronchi
(C)	Chemosensitive area	(III)	Medulla
(D)	Respiratory rhythm centre	(IV)	Cigarette smoking

Choose the **correct** answer from the options given below:
(A) A-I, B-III, C-II, D-IV
(B) A-II, B-I, C-IV, D-III
(C) A-II, B-IV, C-I, D-III
(D) A-II, B-III, C-I, D-IV

Q3 Which of the following is not a symptom of asthma?
(A) Difficulty in breathing
(B) Breathing noisily/wheezing
(C) Alveolar walls are damaged
(D) Inflammation of bronchi and bronchioles

Q4 Which of the following does not stimulate the medullary breathing center chemosensitive neurons?
(A) low blood pH
(B) low blood oxygen
(C) high blood carbon dioxide
(D) high spinal fluid acidity

Q5 Which part of the brain have respiratory rhythm centre?
(A) Cerebellum region
(B) Brain stem region
(C) Medulla region
(D) Temporal region

Q6 What is **incorrect** about regulation of respiration?
(A) Medulla oblongata of the brain is called respiratory rhythm center.
(B) Pneumotaxic center situated at pons checks the duration of inspiration.
(C) Oxygen plays very significant role in regulation of respiratory rhythm.
(D) Receptors associated with aortic arch & carotid artery also recognize changes in CO_2 concentration & thereby affect respiration.

Q7 **Assertion (A):** Chemo sensitive area is situated adjacent to the rhythm center which is highly sensitive to CO_2 and hydrogen ions.
Reason (R): Receptors associated with aortic arch and carotid artery can recognize changes in O_2 and H^+ concentration and send necessary signals to the rhythm center.
(A) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is a correct explanation of **Assertion (A).**
(B) Both **Assertion (A)** and **Reason (R)** are the true, but **Reason (R)** is not a correct explanation of **Assertion (A)**.
(C) **Assertion (A)** is true, and **Reason (R)** is false.
(D) **Assertion (A)** is false, and **Reason (R)** is true.

Q8 **Statement-I:** A pneumotaxic centre in the pons region of the brain can alter respiratory mechanisms.
Statement-II: A chemosensitive area in the medulla can alter respiratory mechanisms
(A) Statement I and Statement II both are correct
(B) Statement I is correct, but Statement II is incorrect
(C) Statement I is incorrect, but Statement II is correct
(D) Statement I and Statement II both are incorrect

Q9 Receptors linked with the aortic arch and carotid artery can detect alterations in _____ and _____ concentrations and transmit appropriate signals to the _____ for corrective measures.
(A) O_2, CO_2, pneumothorax
(B) CO_2, H^+, rhythm center
(C) CO_2, H^+, apneustic center
(D) O_2, H^+, pneumothorax

Q10 Find the pair which is incorrect.
(A) Emphysema- Respiratory surface increased
(B) Respiratory part- Alveoli and their ducts
(C) Chemosensitive area- Highly sensitive to CO_2 and H^+ ions
(D) Thoracic chamber- Vertebral column, sternum, ribs, and diaphragm

Q11 What impact does a high concentration of hydrogen ions (H^+) have on the binding of oxygen to hemoglobin?
(A) Enhances oxygen binding affinity
(B) Diminishes oxygen binding affinity
(C) No effect
(D) Helps in the formation of stable complex

Q12 Decrease in pH causes O_2 dissociation curve of haemoglobin to shift to;
(A) Left
(B) Right
(C) Remain unchanged
(D) Oscillate erratically

Q13 The effect of CO_2 concentration on dissocation of oxyhaemoglobin is called
(A) Bohr's effect
(B) Root effect
(C) Haldane effect
(D) None of the above

Q14 **Statement-I:** RBCs contain a very high concentration of the enzyme, carbonic anhydrase.
Statement-II: At the alveolar site, CO_2 diffuses into blood and forms HCO^{3-} and H^+.
(A) Statement I and Statement II both are correct.
(B) Statement I is correct, but Statement II is incorrect.
(C) Statement I is incorrect, but Statement II is correct.
(D) Statement I and Statement II both are incorrect.

Q15 The process of migration of chloride ions from plasma to RBCs and carbonate ions from RBCs to plasma is
(A) Chloride shift
(B) Ionic shift
(C) Atomic shift
(D) Na^+ Pump

Q16 Which factors favour the binding of CO_2 with Hb in tissues?
(A) High pCO_2 and high pO_2
(B) Low pCO_2 and high pO_2
(C) Low pCO_2 and low pO_2
(D) High pCO_2 and low pO_2

Q17 Choose the right sequential phenomena among the following during the delivery of O_2 from blood to tissue.
I. Absorption of CO_2 by the blood.
II. Reaction of absorbed CO_2 with H_2O to form H_2CO_3 within RBC and its conversion into H^+ and HCO_3^- ions.
III. Reaction of absorbed CO_2 with H_2O in plasma to form H_2CO_3 and its conversion into H^+ and HCO_3^- ions.

IV. Combination of H^+ with haem portion of HbO_2 to release O_2.
V. Combination of HCO_3^- with haem portion of HbO_2 to form reduced haemoglobin and release of O_2.
(A) I, II, V (B) I, III, IV
(C) I, II, IV (D) I, III, V

Q18 Under normal physiological conditions in human being every 100 ml of oxygenated blood can deliver _____ ml of O_2 to the tissues.
(A) 5 ml
(B) 4 ml
(C) 10 ml
(D) 2 ml

Q19 Oxygen is transported-
(A) 97% by Hb&3% Dissolved in plasma
(B) 3% by Hb&97% Dissolved in plasma
(C) 50% by Hb&50% dissolved in plasma
(D) Only in the form of oxyhemoglobin

Q20 Out of the given four statements find the one which is incorrect.
(A) Trachea divides at the level of 5th thoracic vertebra.
(B) About 97% of CO_2 is transported by RBCs in the blood & the remaining 3% is carried in a dissolved state through the plasma.
(C) Inspiration and expiration are the two stages of breathing.
(D) All of these are correct

Q21 Under normal physiological conditions in human being every $100ml$ of oxygenated blood can deliver..... ml of O_2 to the tissues.
(A) $10ml$ (B) $2ml$
(C) $5ml$ (D) $4ml$

Q22 Which of the following condition is not responsible for shifting the curve towards left?
(A) High pO_2
(B) Low pCO_2
(C) Low temperature
(D) High H^+ ion concentration

Q23 Which of the following does not shift the oxyhaemoglobin dissociation curve to the right?
(A) Increase pH
(B) Increased carbon dioxide
(C) Increased temperature
(D) Increased 2, 3-DPG

Q24 Oxyhemoglobin dissociates into oxygen and hemoglobin at
(A) Low O_2, pressure in tissue
(B) High O_2, pressure in tissue
(C) Equal O_2, pressure inside and outside tissue
(D) All times irrespective of O_2, pressure

Q25 Oxygen dissociation curve is a
(A) Sigmoid curve
(B) J-shaped curve
(C) Exponential growth curve
(D) Hyperbolic curve

Answer Key

Q1	(B)
Q2	(C)
Q3	(C)
Q4	(B)
Q5	(C)
Q6	(C)
Q7	(C)
Q8	(A)
Q9	(B)
Q10	(A)
Q11	(B)
Q12	(B)
Q13	(A)
Q14	(B)
Q15	(A)
Q16	(D)
Q17	(C)
Q18	(A)
Q19	(A)
Q20	(B)
Q21	(C)
Q22	(D)
Q23	(A)
Q24	(A)
Q25	(A)