

Yakeen NEET 2.0 2026

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Breathing and Exchange of Gases

DPP: 4

Q1 An additional volume of air, a person can inspire by a forceful inspiration is known as:

- (A) inspiratory capacity.
- (B) expiratory capacity.
- (C) expiratory reserve volume.
- (D) inspiratory reserve volume.

Q2 Match the items given in Column I with those in Column II and select the correct option given below:

Column I**Column II**

- | | |
|-------------------------------|--------------------|
| A. Tidal Volume | i. 2500 — 3000 mL |
| B. Inspiratory Reserve volume | ii. 1100 — 1200 mL |
| C. Expiratory Reserve volume | iii. 500 — 550 mL |
| D. Residual volume | iv. 1000 — 1100 mL |
- (A) A-i, B-iv, C-ii, D-iii
 - (B) A-iii, B-i, C-iv, D-ii
 - (C) A-iii, B-ii, C-i, D-iv
 - (D) A-iv, B-iii, C-ii, D-i

Q3 Which among the following cannot be measured directly?

- (A) Tidal volume
- (B) Residual volume
- (C) Expiratory reserve volume
- (D) Inspiratory capacity

Q4 Residual volume in the lungs of an human is

- (A) 500ml
- (B) 3 - 4.5 litre
- (C) 800ml
- (D) 1200ml

Q5 About 1200ml of air left in lungs is called

- (A) Tidal volume
- (B) Inspiratory reserve volume
- (C) Residual volume

(D) Vital capacity

Q6 Functional residual capacity in human is the amount of air

- (A) that can be filled in lungs by forceful inspiration.
- (B) that can be breathed out after forceful expiration.
- (C) that remains in the lungs after normal expiration.
- (D) that remains in the lungs after forceful expiration.

Q7 Which of the following volume is **not** included in vital capacity?

- (A) ERV
- (B) TV
- (C) IRV
- (D) RV

Q8 Vital capacity of lung is _____.

- (A) IRV + ERV + TV + RV
- (B) IRV + ERV + TV - RV
- (C) IRV + ERV + TV
- (D) IRV + ERV

Q9 The total lung capacity is represented by;

- (A) tidal volume + vital capacity
- (B) tidal volume + residual volume
- (C) vital capacity + residual volume
- (D) inspiratory and expiratory reserve volumes

Q10 Assertion (A): Alveoli are the primary sites of exchange of gases.

Reason (R): The diffusion membrane is made up of epithelium of alveoli and the endothelium of alveolar capillaries alone.

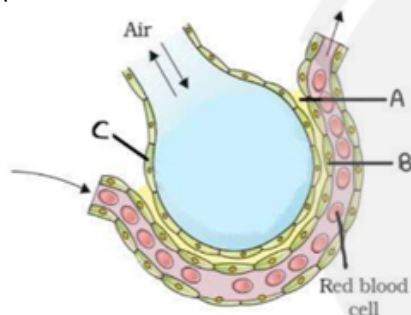
- (A) A is true but R is false.
- (B) A is false but R is true.
- (C) Both A and R are true and R is the correct explanation of A.



(D) Both A and R are true but R is not the correct explanation of A.

- Q11** Diffusion of oxygen across alveoli occurs through;
- (A) basement layer → endothelium of alveolar capillary → squamous epithelium of alveoli
 - (B) squamous epithelium of alveoli → basement layer → endothelium of blood capillary
 - (C) endothelium of alveolar capillaries → basement layer → squamous epithelium of alveoli
 - (D) endothelium of alveolar capillaries → squamous epithelium of alveoli → basement layer

- Q12** The diffusion membrane is formed of three layers. Identify A, B, C and mark the **correct** option.



- (A) A-Fat layer, B-Endothelium of artery, C-Columnar epithelium of alveolar wall
 - (B) A-Basement substance, B-Endothelium of vein, C-Squamous epithelium of alveolar wall
 - (C) A-Fat layer, B-Basement substance, C-Alveolar wall
 - (D) A-Basement substance, B-Endothelium of blood capillary, C-Squamous epithelium of alveolar wall
- Q13** In lungs, air is separated from venous blood by;
- (A) Squamous epithelium + tunica externa of blood vessel
 - (B) Squamous epithelium + endothelium of blood vessel
 - (C) Transitional epithelium + tunica media of blood vessel
 - (D)

Columnar epithelium + layered wall of blood vessel

- Q14** Respiratory diffusion membrane comprises of;
- (A) Alveolar epithelia
 - (B) Basement membrane
 - (C) Capillary endothelium
 - (D) All of these
- Q15** The total thickness of the diffusion membrane of alveolus capillary is:
- (A) less than 1 cm
 - (B) less than 2 cm
 - (C) less than 1 mm
 - (D) more than 1 mm
- Q16** Value of pO_2 and pCO_2 in atmospheric air, alveoli and pulmonary vein respectively is
- (A) High pO_2 and low pCO_2
 - (B) High pCO_2 and low pO_2
 - (C) Both are equal ($pCO_2 = pO_2$)
 - (D) Low pO_2 and low pCO_2
- Q17** Which are the three main layers that form the diffusion membrane?
- (A) Thin squamous epithelium of alveoli, basement membrane of bronchioles and basement substance
 - (B) Thin squamous epithelium of alveoli, endothelium of alveolar capillaries and the basement substance
 - (C) Basement substance, cuboidal epithelium of alveoli and stratified epithelium of bronchiole
 - (D) Ciliated epithelium of trachea, endothelium of capillaries and basement substance
- Q18** The partial pressure of oxygen in the alveoli of the lungs is:
- (A) equal to that in the blood.
 - (B) more than that in the blood.
 - (C) less than that in the blood.
 - (D) less than that of carbon dioxide.
- Q19** Membrane separating air in pulmonary alveoli from blood capillaries is
- (A) Alveolar epithelium

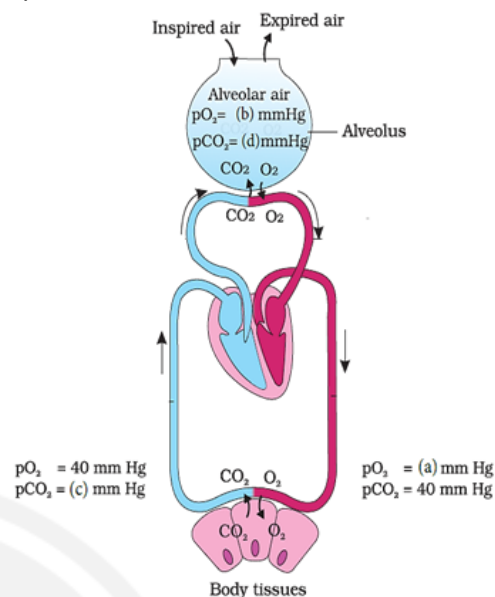


- (B) Cardiac epithelium
 (C) Endothelium of blood capillaries
 (D) Both (A) and (C)

- Q20** In humans, exchange of gases occurs
 (A) By diffusion
 (B) Between blood and tissue
 (C) Between alveoli and pulmonary blood capillary
 (D) All of the above
- Q21** Partial pressure for oxygen and carbon dioxide is represented as
 (A) pO and pCO
 (B) pO and pCO_2
 (C) pO_2 and pCO_2
 (D) O_2p and CO_2p
- Q22** The partial pressure of CO_2 is minimum in the
 (A) Atmospheric air
 (B) Alveoli
 (C) Deoxygenated blood
 (D) Oxygenated blood
- Q23** The partial pressure of oxygen is equal in
 (A) Atmospheric air and Alveoli
 (B) Alveoli and Oxygenated blood
 (C) Alveoli and Deoxygenated blood
 (D) Deoxygenated blood and Tissues Alveoli
- Q24** **Statement-I:** Partial pressure is the pressure contributed by an individual gas in a mixture of gases.
Statement-II: Partial pressure is represented as pO_2 for oxygen and pCO_2 for carbon dioxide.
 (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.
- Q25** Partial pressure for oxygen and carbon dioxide is represented as;
 (A) pO and pCO (B) pO and pCO_2

- (C) pO_2 and pCO_2 (D) O_2p and CO_2p

- Q26** Recognise the figure and find out the correct option.



- (A) a-95, b-104, c-45, d-40
 (B) a-45, b-95, c-104, d-45
 (C) a-104, b-45, c-95, d-40
 (D) a-104, b-159, c-59, d-40

- Q27** Directions : In the question, two statements are given as Statement-I and Statement-II. Mark the correct choice as:

Statement-I: Pressure contributed by an individual gas in a mixture of gases is called partial pressure.

Statement-II: Aquatic arthropods and molluscs exhibit branchial respiration.

- (A) Both Statement-I and Statement-II are correct.
 (B) Both Statement-I and Statement-II are incorrect.
 (C) Statement-I is correct and Statement-II is incorrect.
 (D) Statement-I is incorrect and Statement-II is correct.

- Q28** Solubility of CO_2 is _____ times higher than that of O_2
 (A) 40 – 45 (B) 20 – 25
 (C) 100 – 200 (D) 200 – 300



Q29 Which of the following factors affect the rate of diffusion?

- (a) Pressure gradient
- (b) Concentration gradient
- (c) Solubility of gases
- (d) Reactivity of gases
- (e) Thickness of the membranes involved in diffusion

(A) a, b and c only

(B) a, c, d and e

(C) a, b, c and e

(D) a, b, c, d and e

Q30 Find the incorrect statement.

(A) Solubility of CO_2 is 20-25 times higher than that of O_2 .

(B) The oxygen dissociation curve is a sigmoid curve.

(C) Conducting part of human respiratory system help in the diffusion of O_2 and CO_2 between blood and air.

(D) All are incorrect.



Answer Key

Q1 (D)
Q2 (B)
Q3 (B)
Q4 (D)
Q5 (C)
Q6 (C)
Q7 (D)
Q8 (C)
Q9 (C)
Q10 (A)
Q11 (B)
Q12 (D)
Q13 (B)
Q14 (D)
Q15 (C)

Q16 (A)
Q17 (B)
Q18 (B)
Q19 (D)
Q20 (D)
Q21 (C)
Q22 (A)
Q23 (D)
Q24 (A)
Q25 (C)
Q26 (A)
Q27 (A)
Q28 (B)
Q29 (C)
Q30 (C)



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