

1. Hemoglobin that is bonded to carbon monoxide and therefore cannot transport oxygen, is called

- ✓ (A) Carboxyhemoglobin
- (B) Methemoglobin
- (C) Reduced hemoglobin
- (D) Carbaminohemoglobin

↳ $\text{CO}_2 + \text{Hb}$

CO

affinity 200-250 Hb
↳ Binding efficiency

2. 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

Shift to RIGHT (Tissue)
(dissociation of O_2 from Hb)

- $PO_2 \downarrow$
- $PCO_2 \uparrow$
- $H^+ \uparrow$
- $pH \downarrow$
- $temp \uparrow$

3. The partial pressure of oxygen is equal to
- (A) Atmospheric air and Alveoli ✗
 - (B) Alveoli and oxygenated blood
 - (C) Alveoli and Deoxygenated blood
 - (D) Deoxygenated blood and Tissues ✓

Alveoli 104 159 → Atm
deoxy $P_{O_2} - 40$

P. vein $P_{O_2} - 95$

$P_{O_2} - 40$

4. The solubility of carbon dioxide is about times higher than that of oxygen across the respiratory membrane.

~~(A) 20-25~~

(B) 25-50

(C) 125-150

(D) 200-250

5. 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

Alveoli → $P_{O_2} = 104 \text{ mmHg}$
deO₂ → $P_{O_2} \rightarrow \underline{40 \text{ mmHg}}$

6. A large proportion of oxygen is left unused in the human blood even after its uptake by the body tissues. This O_2
- (A) raises the P_{CO_2} of blood to 75 mm of Hg
 - (B) is enough to keep oxyhaemoglobin
 - (C) helps in relasing more O_2 to the epithelial tissues
 - (D) acts as a reserve during muscular exercise

Extra O_2 → tissue
Unused O_2 → Muscular exercise

7. Oxyhemoglobin dissociates into oxygen and deoxyhaemoglobin 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 ✗

✓ Shift to Right

Shift to Left

8. The haemoglobin content per 100 ml of blood of a normal healthy human adult is:

(A) 5-11 g

(B) 25-30 g

(C) 17-20 g

(D) 12-16 g

✓

1 g Hb \rightarrow 1.34 ml O_2

15 g Hb \rightarrow 100 ml Blood

100 ml Blood \rightarrow 20 ml O_2

9. Which of the following is a true statement?
- (A) Oxygen binding with Hb is a reversible process
 - (B) Oxygen binding with Hb is an irreversible process
 - (C) Hb is not a protein
 - (D) It's not a pigment



Oxygenation

10. The binding of Hb with oxygen forms

- (A) Methamoglobin
- (B) Carbaminohaemoglobin
- (C) Oxyhaemoglobin
- (D) Carbaminohaemoglobin

Nitrate

CO₂

11. Each Hb can carry a maximum of oxygen molecules.

(A) 2

~~(B) 4~~

(C) 8

(D) 6

