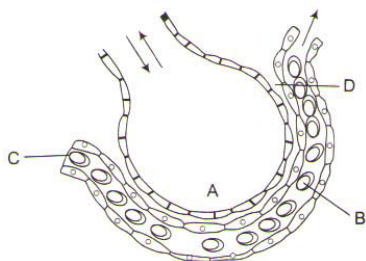


**Topic :- Breathing and Exchange of Gases**

- Why does the air in the nasal cavity get warmed?
  - Because of the presence of many hairs present in nasal cavity
  - Because the nasal cavity has very good blood supply
  - Because the nasal cavity has mucous membrane
  - All of the above
- Haemoglobin (Hb) is a
  - Reproductive pigment
  - Respiratory pigment
  - Carbohydrate
  - Fat
- The figure given below shows a small part of human lung where exchange of gas takes place. In which one of the options given below, the one part A, B, C or D is correctly identified along with its function.



- A - Alveolar cavity - main site of exchange of respiratory gases
  - D - Capillary wall - exchange of gases takes place here
  - B - Red blood cell - transport of mainly haemoglobin
  - C - Arterial capillary - passes oxygen to tissues
- How many molecules of oxygen can bind to a molecule of haemoglobin?
    - One
    - Two
    - Three
    - Four
  - 'XX' is a part of respiratory system that contains C-shaped rings of hyaline cartilage. 'XX' is lined with ciliated, pseudostratified columnar epithelium. Identify 'XX'
    - Nasopharynx
    - Glottis
    - Larynx
    - Trachea

6. The oxygen toxicity is related with  
 a) Blood poisoning  
 b) Collapsing of alveolar walls  
 c) Failure of ventilation of lungs  
 d) Both (a) and (b)
7. Arrange the given steps by which the pulmonary volume increases in the sequence of events occurring first  
 I. Contraction of intercostal muscles  
 II. Lifting up of the ribs  
 III. Sternum causing an increase in the volume of the thoracic chamber in dorsoventral axis  
 IV. Contraction of the diaphragm which increases the volume of the thoracic chamber in antero-posterior axis  
 Choose the correct option  
 a) I → II → III → IV      b) IV → I → II → III      c) IV → I → III → II      d) I → III → IV → II
8. Almost same  $p\text{CO}_2$  in humans is found in  
 a) Oxygenated blood and tissues  
 b) Deoxygenated blood and oxygenated blood  
 c) Deoxygenated blood and tissues  
 d) All of the above
9. During swallowing, glottis can be covered by a thin elastic cartilaginous flap called ...A... to prevent the entry of food into larynx. Trachea is a straight tube extending up to ...B... cavity, which divides at the level of 5th thoracic vertebra into right and left primary ...C...  
 Choose the correct option for A, B and C from the given four options to complete the above statement with reference to NCERT textbook  
 a) A-epiglottis, B-bronchi, C-bronchioles  
 b) A-epiglottis, B-mid thoracic, C-bronchi  
 c) A-epiglottis, B-hind thoracic, C-bronchi  
 d) A-epiglottis, B-pre thoracic, C-bronchi
10. Volume of air breathed in and out, while at rest is called  
 a) Residual volume      b) Tidal volume      c) Vital volume      d) Total lung capacity
11. Residual volume is  
 a) Lesser than tidal volume  
 b) Greater than inspiratory volume  
 c) Greater than vital capacity  
 d) Greater than tidal volume
12. Which part of the brain is called respiratory rhythm centre?  
 a) Cerebellum region      b) Brain stem region      c) Medulla region      d) Temporal region
13. Tidal volume is  
 a) Volume of air inspired or expired  
 b) Additional volume of air, a person can inspire by a forcible inspiration  
 c) Additional volume of air, a person can expire by a forcible expiration  
 d) Remaining volume of air in the lungs even after a forcible expiration

14. Identify which respiratory structure possesses the following features and choose the correct option accordingly
- I. Found in mammals
  - II. Highly muscular and fibrous partition, elevated towards the thorax like a dome
  - III. Separates thoracic and abdominal cavity
- a) Pleural membrane    b) Phrenic muscle    c) Diaphragm    d) Mediastinum
15. Haemoglobin is having maximum affinity with
- a) Carbon dioxide    b) Carbon monoxide    c) Oxygen    d) Ammonia
16. Arrange the given steps of expiration in the sequence of event occurring first
- I. Relaxation of the diaphragm and sternum
  - II. Reduction of the pulmonary volume
  - III. Expulsion of air from the lungs
  - IV. Increase in intra pulmonary pressure
- Choose the correct option
- a) I → II → III → IV    b) I → II → IV → III    c) IV → III → II → I    d) IV → II → III → I
17. Factors affecting the rate of diffusion is/are
- a) Pressure gradient
  - b) Solubility of gases
  - c) Thickness of membranes
  - d) All of these
18. Which one of the following is the correct statement regarding the process of respiration in humans?
- a) Cigarette smoking may lead to inflammation of nasopharynx
  - b) Neural signals from the pneumotoxic centre in the pons region of the brain can't increase the duration of inspiration
  - c) Workers in grinding and stone breaking industries may suffer from lung fibrosis
  - d) About 90% of CO<sub>2</sub> is carried out by haemoglobin as carbominohaemoglobin
19. Identify the component of respiratory system which displays the features given below and choose the correct option
- I. Double layered
  - II. Fluid contained in it reduces the friction on the lung surface
  - III. Its outer layer is in contact with thoracic wall
  - IV. Its inner layer is in contact with lungs
- a) Visceral layer    b) Peritoneum cavity    c) Visceral organs    d) Pleura

20. I. On an average a healthy human breathes 12-16 times/minute  
II. The volume of air involved in the breathing movements can be estimated by spirometer  
III. Diaphragm is very useful in both inspiration and expiration  
Which of the above statements are incorrect?

Choose the correct option

- a) I and II                      b) II and III                      c) I and III                      d) None of these

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