



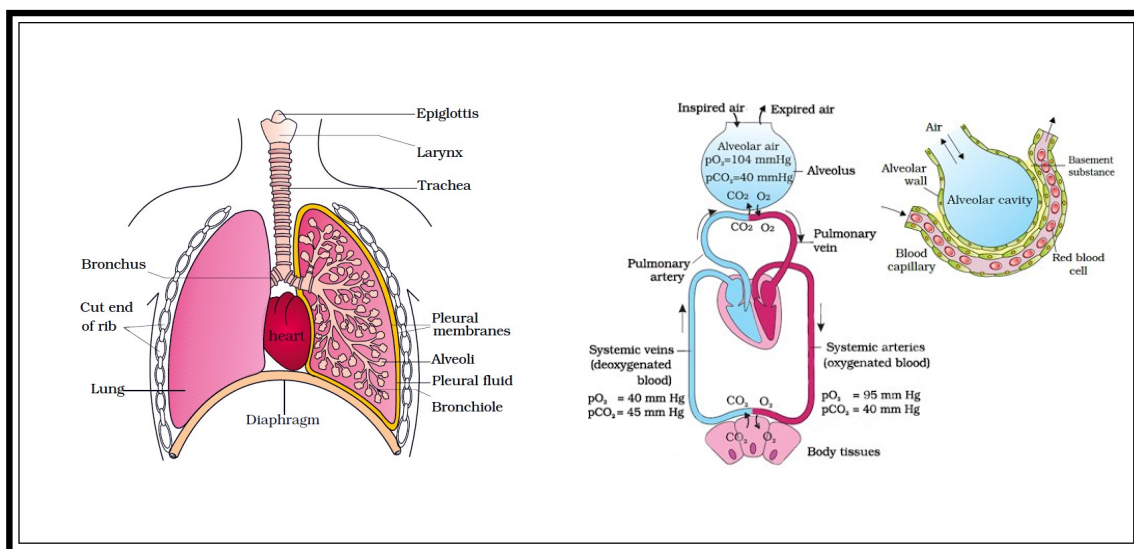
# MATRIX

## FOUNDATION PROGRAM

*AJM BIOLOGY*

### *HUMAN PHYSIOLOGY*

#### *1. BREATHING & EXCHANGE OF GASES*



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**EXERCISE-I****INTRODUCTION**

1. Site of gaseous exchange of gases in tadpole larva is :-  
(A) Skin (B) Gills  
(C) Lungs (D) Buccopharyngeal cavity
2. Respiratory organ in insect is :-  
(A) Skin (B) Lungs  
(C) Trachea (D) Book lungs
3. Respiration through skin is called :-  
(A) Buccopharyngeal respiration (B) Cutaneous respiration  
(C) Branchial respiration (D) Tracheal respiration
4. Given below is list of animals :  

Cockroach, Prawn, Spiders, Fishes, Frog, Earthworm, Tadpole larva, Snakes
---

  
How many of the above respire through “Gills” ?  
(A) Two (B) Three  
(C) Four (D) Five
5. A process by which we intake  $O_2$  rich air and expel out the  $CO_2$  rich air is known as -  
(A) Respiration (B) Inspiration  
(C) Breathing (D) Expiration
6. Mechanisms of breathing vary among different groups of animals depending mainly on their:- habitats and levels of organisation  
(A) Feeding habits and level of organisation  
(B) habitats and level of organisation  
(C) feeding habits and habitats  
(D) excretory matter and type of blood vascular system
7. Which of the following statement is incorrect ?  
(A) Among vertebrates, fishes use gills whereas amphibians, reptiles, birds and mammals respire through lungs.  
(B) Mechanisms of breathing vary among different groups of animals depending mainly on their habitats and levels of organisation.  
(C) Lower invertebrates like sponges, coelenterates, flatworms, etc., exchange  $O_2$  with  $CO_2$  by osmosis over their entire body surface.  
(D) Earthworms use their moist cuticle and insects have a network of tubes (tracheal tubes) to transport atmospheric air within the body.

**HUMAN RESPIRATORY SYSTEM**

8. Which of the following prevents collapsing of Trachea  
(A) Muscles (B) Diaphragm  
(C) Ribs (D) Cartilaginous rings
9. Simplest respiratory organ is :  
(A) gills (B) contractile vacuole  
(C) skin (D) lungs
10. Tracheal rings are :  
(A) Complete (B) Incomplete  
(C) Dorsally incomplete (D) Lateral incomplete
11. Which one of the following has the smallest diameter?  
(A) Right primary bronchus (B) Secondary bronchi  
(C) Trachea (D) Respiratory bronchioles
12. Adam's Apple represents  
(A) Arytenoid cartilage of larynx (B) Cricoid cartilage of larynx  
(C) Thyroid cartilage of larynx (D) All the above
13. Which of the following is not a part of respiratory tract  
(A) Nasal chamber (B) Oesophagus  
(C) Pharynx (D) Trachea
14. Residual air mostly occurs in  
(A) Alveoli (B) Bronchus  
(C) Nostrils (D) Trachea
15. The epithelium of respiratory bronchioles is :  
(A) Pseudostratified columnar (B) Simple squamous  
(C) Pseudostratified and sensory (D) Cuboidal and columnar
16. "Epiglottis" is made up by :  
(A) Elastic cartilage (B) Fibrous cartilage  
(C) Hyaline cartilage (D) Bony structure
17. Air is breathed through  
(A) Trachea → lungs → larynx → pharynx → alveoli  
(B) Nose → larynx → pharynx → bronchus → alveoli → bronchioles  
(C) Nostrils → pharynx → larynx → trachea → bronchi → bronchioles → alveoli  
(D) Nose → trachea → larynx → bronchi → pharynx → alveoli

18. Lungs are covered by  
 (A) Perichondrium (B) Pleural sac  
 (C) Pericardium (D) Peristomium
19. Which of the following structure is not the part of Respiratory tree ?  
 (A) Alveolar duct (B) Atria  
 (C) Segmental bronchi (D) Respiratory bronchiole

### MECHANISM OF BREATHING

20. Find the incorrect statement:-  
 (A) When  $\text{CO}_2$  concentration increases in blood breathing rate becomes slower.  
 (B) Breathing rate in infants is greater than adults.  
 (C) On an average, a healthy human breathes 12-16 times/minute.  
 (D) We have the ability to increase the strength of inspiration and expiration with the help of additional muscles in the abdomen.
21. Find the incorrect difference between inspiration and expiration:-

S.no.		INSPIRATION	EXPIRATION
(A)	Diaphragm	Contraction	Relaxation
(B)	EICM	Contraction	Relaxation
(C)	Movement of ribs	Outward	Inward
(D)	Movement of sternum	Backward	Forward

22. Normal breathing is known as :-  
 (A) eupnoea  
 (B) apnoea  
 (C) dyspnoea  
 (D) asphyxia
23. It is a state of suffocation due to high  $\text{CO}_2$  concentration or low  $\text{O}_2$  concentration :-  
 (A) eupnoea (B) bradypnoea  
 (C) asphyxia (D) apnoea
24. Among mammals, the efficiency of ventilation of lungs as compared to reptiles and birds is better developed by the presence of  
 (A) Ribs & costal muscles  
 (B) Only ribs  
 (C) Only costal muscles  
 (D) Diaphragm

25. Which statement is correct ?
- (A) Pulmonary ventilation is equal to alveolar ventilation.
  - (B) Pulmonary ventilation is less than alveolar ventilation.
  - (C) Alveolar ventilation is more than Pulmonary ventilation.
  - (D) Alveolar ventilation is less than Pulmonary ventilation.

**RESPIRATORY VOLUMES AND CAPACITIES**

26. If expiratory reserve volume is 1100 ml residual volume is 1200 ml and tidal volume is 500 ml, what shall be the functional residual capacity
- (A) 1600 ml
  - (B) 2800 ml
  - (C) 2300 ml
  - (D) 1200 ml
27. Residual volume is :
- (A) lesser than tidal volume
  - (B) greater than inspiratory volume
  - (C) greater than vital capacity
  - (D) greater than tidal volume
28. Vital capacity of lungs is
- (A)  $TV + IRV + ERV$
  - (B)  $TV + IRV + RV$
  - (C)  $TV + ERV$
  - (D)  $IRV + ERV$
29. The most important muscular structure in respiratory system of human is
- (A) External intercostal muscles
  - (B) Internal intercostal muscles
  - (C) Diaphragm
  - (D) Vertebral column
30. After deep inspiration, capacity of maximum expiration of lung is called :-
- (A) Total lung capacity
  - (B) Functional residual capacity
  - (C) Vital capacity
  - (D) Inspiratory capacity
31. About 1500 ml of air left in lungs is called
- (A) Tidal volume
  - (B) Inspiratory reserve volume
  - (C) Residual volume
  - (D) Vital capacity
32. Which one has the lowest value
- (A) Tidal volume
  - (B) Vital capacity
  - (C) Inspiratory reserve volume
  - (D) Expiratory reserve volume

33. Volume of air inspired or expired with each normal breath is known as  
(A) Inspiratory capacity  
(B) Total lung capacity  
(C) Tidal volume  
(D) Residual volume
34. Total lung capacity is  
(A) 1 lit (B) 3 lit  
(C) 6 lit (D) 8 lit
35. Air that remains in lung after most powerful expiration is  
(A) Inspiratory air (B) Dead space air  
(C) Tidal air (D) Residual air
36. During normal respiration without any effort the volume of air inspired or expired is called -  
(A) Tidal volume  
(B) Reserve volume  
(C) Residual volume  
(D) None of these
37. Which instrument helps in clinical assessment of pulmonary Volumes ?  
(A) Sphygmomanometer (B) Stethoscope  
(C) Spirometer (D) Electrocardiograph
38. Volume of air remains in the lungs after normal expiration is  
(A) ERV + RV (B) IRV + RV  
(C) RV + IRV + ERV (D) TV
39. Which of the following volume is not included in vital capacity  
(A) ERV (B) TV  
(C) IRV (D) RV

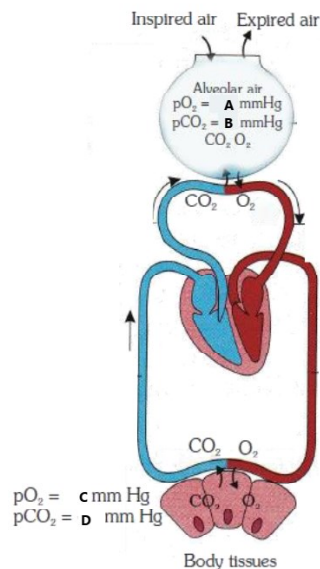
### **EXCHANGE & TRANSPORT OF GASES**

40. Oxygen haemoglobin dissociation curve will shift to right on decrease of  
(A) Acidity  
(B) Carbon dioxide concentration  
(C) Temperature  
(D) pH

41. Body tissues obtain  $O_2$  from oxyhaemoglobin because of its dissociation in tissues caused by
- (A) Low oxygen concentration and high  $CO_2$  concentration
  - (B) High  $O_2$  concentration
  - (C) Low  $CO_2$  concentration
  - (D) High  $CO_2$  concentration
42. Partial pressure of carbon dioxide in Alveoli, atmospheric air and tissues will be :-
- (A) (0.3, 40, 45) mmHg
  - (B) (40, 0.3, 45) mmHg
  - (C) (0.3, 104, 28) mmHg
  - (D) (104, 159, 40) mmHg
43. One haemoglobin carries how many molecules of  $O_2$  ?
- (A) 4
  - (B) 2
  - (C) 6
  - (D) 8
44. Haemoglobin-oxygen dissociation curve is-
- (A) Hyperbolic
  - (B) Sigmoid
  - (C) Straight
  - (D) Constant
45.  $CO_2$  is transported mainly as :
- (A) Carbaminohaemoglobin
  - (B) Oxyhaemoglobin
  - (C) Bicarbonate
  - (D) carboxyhaemoglobin
46. Every 100 ml deoxygenated blood delivers around \_\_\_\_\_  $CO_2$  to alveoli:-
- (A) 20 ml
  - (B) 4 ml
  - (C) 5 ml
  - (D) 25 ml
47. How much oxygen, blood supplies to tissues in one circulation in normal condition :-
- (A) 75%
  - (B) 4%
  - (C) 25%
  - (D) 20%



48. Identify A,B,C and D in the given diagram.



- (A) A-104, B-40, C-40, D-46  
 (B) A-40, B-104, C-40, D-46  
 (C) A-104, B-40, C-46, D-40  
 (D) A-95, B-40, C-40, D-95
49. Which of the following statement is correct?  
 (A) Alveoli are the primary sites of exchange of gases  
 (B) Exchange of gases occur at tissue level and alveolar surface.  
 (C) Pressure contributed by an individual gas in a mixture of gases is called partial pressure and is represented as  $pO_2$  for oxygen and  $pCO_2$  for carbon dioxide.  
 (D) All of the above
50. The amount of  $CO_2$  that can diffuse through the diffusion membrane per unit difference in partial pressure is much higher compared to that of  $O_2$ . Why?  
 (A) because diffusion of gases takes place only at alveoli  
 (B) because the solubility of  $CO_2$  is 20-25 times lesser than that of  $O_2$   
 (C) because the solubility of  $CO_2$  is 20-25 times higher than that of  $O_2$   
 (D) because alveoli are very large in number

51. The diffusion membrane is made up of three major layers namely,.
- (A) the thin squamous epithelium of alveoli, the endothelium of alveolar capillaries and the basement substance in between them
  - (B) the thick squamous epithelium of alveoli, the endothelium of alveolar capillaries and the basement substance in between them
  - (C) the thin columnar epithelium of alveoli, the endothelium of alveolar capillaries and the basement substance in between them
  - (D) the thin columnar and cuboidal epithelium of alveoli, the endothelium of alveolar capillaries and the basement substance in between them

### **REGULATION OF RESPIRATION & RESPIRATORY DISORDERS**

52. The impulse for voluntary muscles for forced breathing starts in
- (A) Medulla oblongata
  - (B) Vagus nerve
  - (C) Cerebellum
  - (D) Cerebrum
53. Respiratory centre of brain is stimulated by
- (A) Carbon dioxide content in venous blood
  - (B) Carbon dioxide content in arterial blood
  - (C) Oxygen content in venous blood
  - (D) Oxygen content in arterial blood
54. Respiratory rhythm centre is present in :
- |                       |              |
|-----------------------|--------------|
| (A) Cerebellum        | (B) Cerebrum |
| (C) Medulla oblongata | (D) Pons     |
55. Hiccough (hiccup) is due to activity of
- (A) Intercostal muscle
  - (B) Food in air tract
  - (C) Diaphragm
  - (D) Inadequate oxygen in environment
56. Pneumotaxic centre is present on
- |              |                |
|--------------|----------------|
| (A) Pons     | (B) Medulla    |
| (C) Cerebrum | (D) Cerebellum |

57. Asthma is a respiratory disease caused due to
- (A) Infection of trachea
  - (B) Infection of lungs
  - (C) Bleeding into pleural cavity
  - (D) Spasm in bronchial muscles
58. When CO<sub>2</sub> concentration in blood increases, breathing becomes -
- (A) There is no effect on breathing
  - (B) Slow and deep
  - (C) Faster
  - (D) Shallower and slow
59. Haemoglobin shows maximum affinity with:-
- (A) Carbon monoxide
  - (B) Carbon dioxide
  - (C) Oxygen
  - (D) Ammonia
60. Inflammation of nasal tract.
- (A) rhinitis
  - (B) asthma
  - (C) bronchitis
  - (D) emphysema
61. Cigarette smoking causes-
- (A) rhinitis
  - (B) asthma
  - (C) bronchitis
  - (D) emphysema
62. Regular swelling and itching of bronchi and is characterised by regular coughing, it indicates.
- (A) occupational Respiratory Disorders
  - (B) asthma
  - (C) bronchitis
  - (D) emphysema
63. Occupational Respiratory Disorders in which-
- (A) inflammation of nasal tract
  - (B) spasm of tracheal muscle
  - (C) fully blown out alveoli
  - (D) proliferation of fibrous tissues

64. In which disorder respiratory surface is decreased.
- (A) bronchitis
  - (B) bronchial asthma
  - (C) emphysema
  - (D) pneumonia
65. At high altitude, RBC of human blood will
- (A) increase in number
  - (B) Decrease in number
  - (C) Decrease in size
  - (D) Increase in size
66. Which of the following is a disorder that involves continued exposure to grinding and stone breaking industries ?
- |                |             |
|----------------|-------------|
| (A) Asbestosis | (B) SARS    |
| (C) Flurosis   | (D) Leprosy |

## EXERCISE-II

## MATCH THE COLUMNS

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

**Column I**

- a. Tidal volume
- b. Inspiratory Reserve volume
- c. Expiratory Reserve volume
- d. Residual volume

**Column II**

- i. 2500-3000 mL
- ii. 1100-1200 mL
- iii. 500-550 mL
- iv. 1000-1100 mL

	a	b	c	d
(A)	iii	ii	i	iv
(B)	iii	i	iv	ii
(C)	iii	iv	ii	iii
(D)	iv	iii	ii	i

2. Match the columns

**Column-I**

- (a) Larynx
- (b) Trachea
- (c) Alveoli
- (d) Epiglottis

**Column-II**

- (p) Lid of glottis
- (q) Air Sac
- (r) Voice Box
- (s) Wind Pipe
- (t) Common Passage
- (B) a-t, b-s, c-p, d-q
- (D) a-r, b-t, c-q, d-p

- (A) a-r, b-s, c-q, d-p
- (C) a-r, b-s, c-q, d-t

3. Match the column-I and II and select the correct answer

**Column-I**
**(Name of animal)**

- (i) Earthworm
- (ii) Cockroach
- (iii) Lizards
- (iv) Sponges
- (v) Dog fish

- (A) i-c, ii-a, iii-e, iv-b, v-d
- (C) i-c, ii-a, iii-b, iv-d, v-e

**Column-II**
**(Respiratory organ)**

- (a) Trachea
- (b) General body surface
- (c) Moist cuticle
- (d) Gills
- (e) Lungs
- (B) i-d, ii-a, iii-b, iv-c, v-e
- (D) i-b, ii-c, iii-d, iv-e, v-a

**MULTIPLE CHOICE QUESTIONS**

4. Respiratory organs in adult frog are :-
- (A) Lungs (B) Gills  
(C) Moist skin (D) Buccal cavity
5. Which one of the following statement is correct?
- (A) Chest expands because air enters into the lungs  
(B) Air enters into the lungs because chest expands  
(C) The muscles of the diaphragm contracts because air enters into the lungs  
(D) A healthy human breathes 12-16 times per minute.
6. Total lung capacity is :-
- (A) total volume of air accommodated in lungs at the end of forced inspiration  
(B)  $RV + ERV + TV + IRV$   
(C) vital capacity + residual volume  
(D)  $IC + ERV$

**EXERCISE-III**
**NSEJS PREVIOUS YEAR QUESTIONS**

1. During gaseous exchange in the alveoli, what happens to nitrogen? [NSEJS 2016-17]
  - (A) There is no net nitrogen exchange, as nitrogen is filtered out by the alveoli.
  - (B) The nitrogen is absorbed by the alveolus to form amino acids.
  - (C) The nitrogen is filtered out by the alveolus, as the nitrogen molecule is too large to cross the gaps in the capillaries
  - (D) There is no net nitrogen exchange, as the blood is saturated with nitrogen
  
2. Raju Sharma, a 10th standard student participated in 100 meter sprint. During running he developed painful muscle contraction and fell down. The physical education teacher rushed to him and gave a hot water massage. Raju Sharma slowly recovered from the cramp. The teacher explained the physiology behind the cramp and the subsequent relief. [NSEJS 2015-16]

Identify the right explanation.

  - (A) Because of the quick movement, the muscles loses its elasticity and are stressed. The inflammation developed during this process causes cramp. After hot water massage the inflammation subsides and the pain gets relieved.
  - (B) During vigorous physical activity, aerobic respiration in the muscles increases which leads to the accumulation of more  $\text{CO}_2$  in the muscles. This causes cramps. Later  $\text{CO}_2$  was relieved upon hot water massage resulting in pain relief.
  - (C) During vigorous physical activity, lactic acid accumulates in the muscles due to anaerobic respiration. This causes the cramps. Hot water massage improves the circulation of blood and  $\text{O}_2$  in the muscles. As a result lactic acid is converted into  $\text{CO}_2$  and water. Thus the pain gets relieved.
  - (D) During quick movements, the nerves will not co-operate with the muscles. There is a stimulus which is taken to spinal cord and the effector function was done by motor neurons which cause cramp. On hot water massage the stimulus was subsided. Thus the pain gets relieved.
  
3. The various parts of the human respiratory system are given below: [NSEJS 2015-16]

(i) Nasal passage	(ii) Pharynx	(iii) Wind pipe
(iv) Bronchus	(v) Bronchioles	(vi) Alveoli

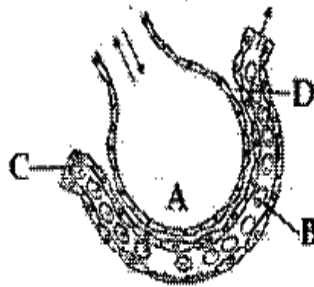
Identify the right sequence of air passage during exhalation.

  - (A) vi, v, ii, iv, iii, i
  - (B) vi, iv, v, iii, ii, i
  - (C) vi, v, iv, iii, ii, i
  - (D) vi, v, ii, iii, iv, i

**EXERCISE-IV**

**BREATHING & EXCHANGE OF GASES**

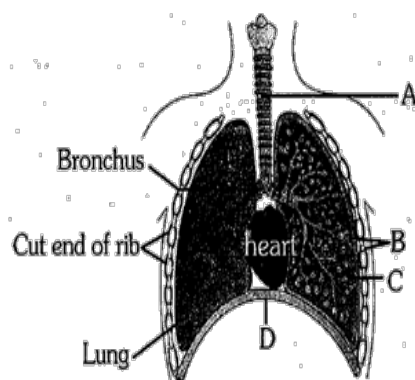
1. The figure given below shows a small part of human lung where exchange of gases takes place. In which one of the options given below, the one part, A, B, C or D is correctly identified along with its function [AIPMT 2011]



- (A) C : arterial capillary-passes oxygen to tissues  
 (B) A : alveolar cavity-main site of exchange of respiratory gases  
 (C) D : Capillary wall-exchange of  $O_2$  and  $CO_2$  takes place here  
 (D) B : red blood cell-transport of  $CO_2$  mainly
2. Bulk of carbon dioxide ( $CO_2$ ) released from body tissues into the blood is present as : [AIPMT 2011]  
 (A) Carbamino-haemoglobin in RBCs  
 (B) Bicarbonate in blood plasma and RBCs  
 (C) Free  $CO_2$  in blood plasma  
 (D) 70% carbamino-haemoglobin and 30% as bicarbonate
3. Which one of the following is the correct statement for respiration in humans ? [AIPMT 2012]  
 (A) Workers in grinding and stone-breaking industries may suffer, from lung fibrosis  
 (B) About 90% of carbon dioxide ( $CO_2$ ) is carried by haemoglobin as carbamino haemoglobin  
 (C) Cigarette smoking may lead to inflammation of bronchi  
 (D) Neural signals from pneumotaxic centre in pons region of brain can increase the duration of inspiration
4. People who have migrated from the plains to an area adjoining Rohtang pass about six months back: [AIPMT 2012]  
 (A) Suffer from altitude sickness with symptoms like nausea, fatigue, etc.  
 (B) Have the usual RBC count but their haemoglobin has very high binding affinity to  $O_2$   
 (C) Have more RBCs and their haemoglobin has a lower binding affinity to  $O_2$   
 (D) Are not physically fit to play games like football.



5. The figure shows a diagrammatic view of human respiratory system with labels A, B, C and D. Select the option which gives correct identification and main function and/or characteristic:- [AIPMT 2013]



- (A) D - Lower end of lungs - diaphragm pulls it down during inspiration  
 (B) A - trachea - long tube supported by complete cartilaginous rings for conducting inspired air  
 (C) B - pleural membrane - surround ribs on both sides to provide cushion against rubbing  
 (D) C - Alveoli - thin walled vascular bag like structures for exchange of gases
6. Approximately seventy percent of carbon-dioxide absorbed by the blood will be transported to the lungs: [AIPMT 2014]
- (A) as bicarbonate ions  
 (B) in the form of dissolved gas molecules  
 (C) by binding to R.B.C.  
 (D) as carbamino - haemoglobin
7. When you hold your breath, which of the following gas changes in blood would first lead to the urge to breathe? [AIPMT 2015]
- (A) Rising  $\text{CO}_2$  concentration  
 (B) Falling  $\text{CO}_2$  concentration  
 (C) Rising  $\text{CO}_2$  and falling  $\text{O}_2$  concentration  
 (D) Falling  $\text{O}_2$  concentration
8. Asthma may be attributed to : [NEET 2016]
- (A) Bacterial infection of the lungs  
 (B) Allergic reaction of the mast cells in the lungs  
 (C) Inflammation of the trachea  
 (D) Accumulation of fluid in the lungs

9. The partial pressure of oxygen in the alveoli of the lungs is:- [NEET 2016]  
(A) Less than that in the blood  
(B) Less than that of carbon dioxide  
(C) Equal to that in the blood  
(D) More than that in the blood
10. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because :- [NEET 2016]  
(A) There is a positive intrapleural pressure  
(B) Pressure in the lungs is higher than the atmospheric pressure.  
(C) There is a negative pressure in the lungs.  
(D) There is a negative intrapleural pressure pulling at the lung walls
11. Lungs are made up of air-filled sacs, the alveoli. They do not collapse even after forceful expiration, because of: [NEET 2017]  
(A) Inspiratory Reserve Volume (B) Tidal Volume  
(C) Expiratory Reserve Volume (D) Residual Volume
12. Which of the following options correctly represents the lung conditions in asthma and emphysema, respectively ? [NEET 2018]  
(A) Inflammation of bronchioles; Decreased respiratory surface  
(B) Increased number of bronchioles; Increased respiratory surface  
(C) Increased respiratory surface; Inflammation of bronchioles  
(D) Decreased respiratory surface; Inflammation of bronchioles
13. Which of the following is an occupational respiratory disorder? [NEET 2018]  
(A) Anthracis (B) Silicosis  
(C) Botulism (D) Emphysema
14. Select the correct statement: [NEET 2019]  
(A) Expiration occurs due to external intercostal muscles  
(B) Intrapulmonary pressure is lower than the atmospheric pressure during inspiration  
(C) Inspiration occurs when atmospheric pressure is less than intrapulmonary pressure  
(D) Expiration is initiated due to contraction of diaphragm
15. The maximum volume of air a person can breathe in after a forced expiration is known as : [NEET 2019]  
(A) Expiratory Capacity (B) Vital Capacity  
(C) Inspiratory Capacity (D) Total Lung Capacity

16. Identify the wrong statement with reference to transport of oxygen : [NEET 2020]  
 (A) Binding of oxygen with haemoglobin is mainly related to partial pressure of  $O_2$   
 (B) Partial pressure of  $CO_2$  can interfere with  $O_2$  binding with haemoglobin  
 (C) Higher  $H^+$  concentration in alveoli favours the formation of oxyhaemoglobin  
 (D) Low  $pCO_2$  in alveoli favours the formation of oxyhaemoglobin
17. Select the correct events that occur during inspiration : [NEET 2020]  
 a. Contraction of diaphragm  
 b. Contraction of external inter-costal muscles  
 c. Pulmonary volume decreases  
 d. Intra pulmonary pressure increases  
 (A) a and b (B) c and b  
 (C) a, b and d (D) only d
18. Select the favourable conditions required for the formation of oxyhaemoglobin at the alveoli : [NEET 2021]  
 (A) High  $pO_2$ , low  $pCO_2$ , less  $H^+$ , lower temperature  
 (B) Low  $pO_2$ , high  $pCO_2$ , more  $H^+$ , higher temperature  
 (C) High  $pO_2$ , high  $pCO_2$ , less  $H^+$ , higher temperature  
 (D) Low  $pO_2$ , low  $pCO_2$ , more  $H^+$ , higher temperature
19. The partial pressures (in mm Hg) of oxygen ( $O_2$ ) and carbon dioxide ( $CO_2$ ) at alveoli the (the site of diffusion) are : [NEET 2021]  
 (A)  $pO_2 = 104$  and  $pCO_2 = 40$   
 (B)  $pO_2 = 40$  and  $pCO_2 = 45$   
 (C)  $pO_2 = 95$  and  $pCO_2 = 40$   
 (D)  $pO_2 = 159$  and  $pCO_2 = 0.3$
20. Which of the following is not the function of conducting part of respiratory system ? [NEET 2022]  
 (A) Provides surface for diffusion of  $O_2$  and  $CO_2$   
 (B) It clears inhaled air from foreign particles  
 (C) Inhaled air is humidified  
 (D) Temperature of inhaled air is brought to body temperature
21. Under normal physiological conditions in human being every 100 ml of oxygenated blood can deliver \_\_\_\_\_ ml of  $O_2$  to the tissues : [NEET 2022]  
 (A) 10 ml (B) 2 ml  
 (C) 5 ml (D) 2 ml

**Answer Key**
**EXERCISE-I**

- |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 1. B  | 2. C  | 3. B  | 4. B  | 5. C  | 6. B  | 7. C  |
| 8. D  | 9. C  | 10. D | 11. D | 12. C | 13. B | 14. A |
| 15. B | 16. A | 17. C | 18. B | 19. B | 20. A | 21. D |
| 22. A | 23. C | 24. D | 25. D | 26. C | 27. D | 28. A |
| 29. C | 30. C | 31. C | 32. A | 33. C | 34. C | 35. D |
| 36. A | 37. C | 38. A | 39. D | 40. D | 41. A | 42. B |
| 43. A | 44. B | 45. C | 46. B | 47. C | 48. A | 49. D |
| 50. C | 51. A | 52. D | 53. B | 54. C | 55. C | 56. A |
| 57. D | 58. C | 59. A | 60. A | 61. D | 62. C | 63. D |
| 64. C | 65. A | 66. A |       |       |       |       |

**EXERCISE-II**

- |      |      |      |          |            |          |
|------|------|------|----------|------------|----------|
| 1. B | 2. A | 3. A | 4. A,C,D | 5. A,B,C,D | 6. A,B,C |
|------|------|------|----------|------------|----------|

**EXERCISE-III**

- |      |      |      |
|------|------|------|
| 1. B | 2. C | 3. C |
|------|------|------|

**EXERCISE-IV**

- |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 1. B  | 2. B  | 3. A  | 4. C  | 5. D  | 6. A  | 7. A  |
| 8. B  | 9. D  | 10. D | 11. D | 12. A | 13. B | 14. B |
| 15. B | 16. C | 17. A | 18. A | 19. A | 20. A | 21. C |