

EXERCISE-I (Conceptual Questions)**Build Up Your Understanding****ANATOMY**

- The function of tracheal cilia is to
(1) Pass mucus out (2) Pass mucus in (3) Pass air out (4) Pass air in
- Which of the following prevents collapsing of Trachea
(1) Muscles (2) Diaphragm (3) Ribs (4) Cartilaginous rings
- Simplest respiratory organ is :
(1) gills (2) contractile vacuole
(3) skin (4) lungs
- Tracheal rings are :
(1) Complete (2) Incomplete
(3) Dorsally incomplete (4) Lateral incomplete
- Which one of the following has the smallest diameter?
(1) Right primary bronchus (2) Secondary bronchi
(3) Trachea (4) Respiratory bronchioles
- Match the columns

	Column-I		Column-II
(a)	Larynx	(p)	Lid of glottis
(b)	Trachea	(q)	Air Sac
(c)	Alveoli	(r)	Voice Box
(d)	Epiglottis	(s)	Wind Pipe
		(t)	Common Passage

 (1) a-r, b-s, c-q, d-p (2) a-t, b-s, c-p, d-q
 (3) a-r, b-s, c-q, d-t (4) a-r, b-t, c-q, d-p
- Adam's Apple represents
(1) Arytenoid cartilage of larynx (2) Cricoid cartilage of larynx
(3) Thyroid cartilage of larynx (4) All the above
- During hibernation period, frog's respiration is :-
(1) cutaneous (2) pulmonary (3) pharyngeal (4) buccopharyngeal
- Which part of thyroid cartilage in larynx is closed
(1) Dorsal (2) Ventral (3) Anterior (4) Posterior
- Inflammation of the lung covering causing severe chest pain is
(1) Emphysema (2) Pleurisy (3) Asphyxia (4) Hypoxia
- Which of the following is not a part of respiratory tract
(1) Nasal chamber (2) Oesophagus (3) Pharynx (4) Trachea

12. Residual air mostly occurs in
 (1) Alveoli (2) Bronchus (3) Nostrils (4) Trachea
13. The epithelium of respiratory bronchioles is :
 (1) Pseudostratified columnar (2) Simple squamous
 (3) Pseudostratified and sensory (4) Cuboidal and columnar
14. "Epiglottis" is made up by :
 (1) Elastic cartilage (2) Fibrous cartilage
 (3) Hyaline cartilage (4) Bony structure
15. Air is breathed through
 (1) Trachea → lungs → larynx → pharynx → alveoli
 (2) Nose → larynx → pharynx → bronchus → alveoli → bronchioles
 (3) Nostrils → pharynx → larynx → trachea → bronchi → bronchioles → alveoli
 (4) Nose → trachea → larynx → bronchi → pharynx → alveoli
16. Lungs are covered by
 (1) Perichondrium (2) Pleural sac (3) Pericardium (4) Peristomium
17. Which of the following structure is not the part of Respiratory tree ?
 (1) Alveolar duct (2) Atria
 (3) Segmental bronchi (4) Respiratory bronchiole

BREATHING AND PULMONARY VOLUMES

18. The most important muscular structure in respiratory system of human is
 (1) External intercostal muscles (2) Internal intercostal muscles
 (3) Diaphragm (4) Vertebral column
19. Which one of the following statement is correct?
 (1) Chest expands because air enters into the lungs
 (2) Air enters into the lungs because chest expands
 (3) The muscles of the diaphragm contracts because air enters into the lungs
 (4) All of the above statements are correct
20. Among mammals, the efficiency of ventilation of lungs as compared to reptiles and birds is better developed by the presence of
 (1) Ribs & costal muscles (2) Only ribs
 (3) Only costal muscles (4) Diaphragm
21. After deep inspiration, capacity of maximum expiration of lung is called :-
 (1) Total lung capacity (2) Functional residual capacity
 (3) Vital capacity (4) Inspiratory capacity
22. Which statement is correct ?
 (1) Pulmonary ventilation is equal to alveolar ventilation.
 (2) Pulmonary ventilation is less than alveolar ventilation.
 (3) Alveolar ventilation is more than Pulmonary ventilation.

(4) Alveolar ventilation is less than Pulmonary ventilation.

- 23.** About 1500 ml of air left in lungs is called
 (1) Tidal volume (2) Inspiratory reserve volume
 (3) Residual volume (4) Vital capacity
- 24.** At high altitude, RBC of human blood will
 (1) increase in number (2) Decrease in number
 (3) Decrease in size (4) Increase in size
- 25.** Which one has the lowest value
 (1) Tidal volume (2) Vital capacity
 (3) Inspiratory reserve volume (4) Expiratory reserve volume
- 26.** Volume of air inspired or expired with each normal breath is known as
 (1) Inspiratory capacity (2) Total lung capacity
 (3) Tidal volume (4) Residual volume
- 27.** Total lung capacity is
 (1) One lit (2) 3 lit (3) 6 lit (4) 8 lit
- 28.** Air that remains in lung after most powerful expiration is
 (1) Inspiratory air (2) Dead space air (3) Tidal air (4) Residual air
- 29.** During normal respiration without any effort the volume of air inspired or expired is called -
 (1) Tidal volume (2) Reserve volume (3) Residual volume (4) None of these
- 30.** Total lung capacity is :-
 (1) total volume of air accommodated in lungs at the end of forced inspiration
 (2) $RV + ERV + TV + IRV$
 (3) vital capacity + residual volume
 (4) All of the above
- 31.** Which instrument helps in clinical assessment of pulmonary Volumes ?
 (1) Sphygmomanometer (2) Stethoscope
 (3) Spirometer (4) Electrocardiograph
- 32.** Volume of air remains in the lungs after normal expiration is
 (1) $ERV + RV$ (2) $IRV + RV$
 (3) $RV + IRV + ERV$ (4) TV
- 33.** Which of the following volume is not included in vital capacity
 (1) ERV (2) TV (3) IRV (4) RV

GASEPIS EXCHANGE

- 34.** In lungs, air is separated from venous blood by
 (1) Squamous epithelium + tunica externa of blood vessel
 (2) Squamous epithelium + endothelium of blood vessel

- (3) Transitional epithelium + tunica media of blood vessel
 (4) Columnar epithelium + 3 layered wall of blood vessel.

35. In lung, gaseous exchange is done by :-
 (1) Simple diffusion (2) Active transport
 (3) Passive transport (4) facilitated diffusion
36. Which of the following statements is not true ?
 (1) The partial pressure of O_2 in deoxygenated blood is 40 mm Hg.
 (2) The partial pressure of O_2 in oxygenated blood is 95 mm Hg
 (3) The partial pressure of O_2 in alveolar air is 104 mm Hg
 (4) The partial pressure of CO_2 in alveolar air is 45 mm Hg
37. Partial pressure of oxygen in alveoli, atmospheric air and tissue will be
 (1) 40, 159, 45 (2) 40, 0.3, 45 (3) 104, 159, 40 (4) 104, 0.3, 45
38. What will be the P_{O_2} and P_{CO_2} in the atmospheric air compared to those in the alveolar air ?
 (1) P_{O_2} lesser, P_{CO_2} higher (2) P_{O_2} higher, P_{CO_2} lesser
 (3) P_{O_2} higher, P_{CO_2} higher (4) P_{O_2} lesser, P_{CO_2} lesser
39. Partial pressure of CO_2 is higher :
 (1) At alveolar level (2) At tissue level (3) In atmosphere (4) In oxygenated blood

TRANSPORT OF GAS

40. "Methemoglobin" refers to
 (1) A colourless respiratory pigment (2) Oxidized haemoglobin
 (3) Oxygenated haemoglobin (4) Deoxygenated haemoglobin
41. Under normal condition 100 ml blood deliver _____ to tissue.
 (1) 4 ml O_2 (2) 10 ml O_2 (3) 5 ml O_2 (4) 25 ml O_2
42. Haldane effect is due to
 (1) CO_2 (2) Lactic acid (3) pH (4) Oxyhaemoglobin
43. What percentage of CO_2 flows in blood in form of bicarbonates
 (1) 7% (2) 23% (3) 50% (4) 70%
44. Effect of CO_2 concentration on dissociation of oxyhaemoglobin is called
 (1) Bohr's effect (2) Haldane effect (3) Hamburger effect (4) Root effect
45. Chloride shift for the transport of
 (1) O_2 (2) CO_2 (3) CO (4) O_3
46. Ratio of oxyhaemoglobin and haemoglobin in blood is based upon
 (1) Oxygen tension (2) Carbon-di-oxide tension
 (3) Carbonate tension (4) Bicarbonate tension

47. Exchange of bicarbonates and chloride ions between RBC and plasma is called:-
 (1) Chloride shift (2) Bohr's effect
 (3) Haldane's effect (4) Intra cellular respiration
48. Deteimination of oxygen carried by haemoglobin is done by
 (1) pH (2) Partial pressure of oxygen
 (3) Partial pressure of carbon dioxide (4) All the above
49. For proper transport of O_2 and CO_2 blood should be
 (1) Slightly acidic (2) Strongly acidic (3) Strongly alkaline (4) Slightly alkaline
50. What would happen when blood is acidic
 (1) Binding of oxygen with haemoglobin increases
 (2) Red blood corpuscles are formed in higher number
 (3) Binding of oxygen with haemoglobin decreases
 (4) There is no change in oxygen binding nor number of RBC
51. The chloride shift is movement of Cl^-
 (1) From plasma to RBC (2) From WBC to plasma
 (3) From RBC to plasma (4) From plasm to WBC
52. Chloride shift occurs in respond to :
 (1) H^+ (2) K^+ (3) HCO_3^- (4) Na^+
53. What happen to the O_2 dissociation curve of Hb if pH is decreased ?
 (1) shift to left (2) shift to right
 (3) remain unchanged (4) will oscillate erratically
54. Dissociation curve shifts to the right when :-
 (1) CO_2 concentration decreases (2) CO_2 concentration increases
 (3) O_2 concentration increases (4) H^+ concentration decreases
55. Concentration of carbonic acid does not increase in blood due to presence of
 (1) Na^+ (2) Mg^{2+} (3) Ca^{2+} (4) K^+
56. Oxyhaemoglobin acts as
 (1) Alkali (2) Acid (3) Neutral (4) Buffer
57. The oxygen- Haemoglobin dissociation curve will show a right shift in case of :-
 (1) Less H^+ concentration (2) High partial pressure of O_2
 (3) Low partial pressure of CO_2 (4) High 2, 3, D.P.G.
58. Statements
 A- Carbonic anhydrase is present in the erythrocytes.
 B- In erythrocytes the carbondioxide combine with water and is transported.
 (1) Statement A is correct and is responsible for statement B
 (2) Statement A is not correct but Statement B is correct
 (3) Both Statement A and B are wrong

(4) Statement A is correct and statement B is wrong

REGULATION AND DISEASES

- 59.** "Emphysema" is a condition in which -
 (1) Respiratory centre inhibited (2) Lot of fluid in the lungs
 (3) The walls separating the alveoli break (4) Lungs have more O_2
- 60.** Rate of respiration is directly affected by
 (1) CO_2 concentration (2) O_2 in trachea
 (3) Concentration of O_2 (4) Diaphragm expansion
- 61.** If a man from sea coast goes to Everest peak then
 (1) His breathing and heart beat will increase
 (2) His breathing and heart beat will decrease
 (3) His respiratory rate will decrease
 (4) His heart beat will decrease
- 62.** CO is more toxic than CO_2 because it:
 (1) Damages lungs
 (2) It destroys haemoglobin
 (3) Affects the nervous system
 (4) Reduces the oxygen carrying capacity of haemoglobin
- 63.** Carbon monoxide has greater affinity for Haemoglobin as compared to oxygen:-
 (1) 1000 Times (2) 200 Times (3) 20 Times (4) 2 Times
- 64.** About 97% of oxygen is transported by RBC remaining 3% is :-
 (1) Dissolved in plasma & transported (2) Retained in lungs
 (3) Attached to cell membranes (4) Found inside mitochondria

ANSWER KEY

EXERCISE-I (Conceptual Questions)

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