BIOLOGY

BOOKS - A2Z BIOLOGY (HINGLISH)

BREATHING AND EXCHANGE OF GASES

Section A Topicwise Questions Topic 1 Respiratory Organs And Human Respiratory System

1. Fill in the blanks:

The ...a... is utilised by the organisms to indirectly breakdown nutrient molecule like glucose to derive ...b... for performing various activities.b

For catabolism, ...c has to be continuously provided to the cells and ...d... produced by cells have to be reieased out

A. a-energy, b-oxygen, c-oxygen, d-CO_2

B. $a - O_2$, b-energy, $c - CO_2$, $d - O_2$

C. a-energy, $b - O_2$, $c - CO_2$, $d - O_2$

D. $a - O_2$, b-energy , $c - CO_2$, $d - O_2$

Answer: D

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2. The process of exchange of O_2 from the atmosphere with CO_2 produced by the cells is called

A. Respiration

B. Breathing

C. Metabolism

D. Both A and B

Answer: D

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3. Methods of locomotion performed by animals vary with their

a. Habits

b. Habitats

c. Level of organisation

(d).Demand of the situation

A. a and b

B. b and c

C. b, c and d

D. a,c and d

Answer: B

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4. Match the columns I and II, and choose the correct combination from the options given

A. a-3, b-1, c-4, d-5, e-2

B. a-12, b-3, c-1, d-4, e-2

C. a-3, b-3, c-4, d-5, e-l

D. a-3, b-2, c-4, d-5, e-1

Answer: C

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5. Which of the following comprises the lungs?

a. Tracheae, b. 1° bronchi, c. 2° bronchi, d. 3° bronchi, e. initial bronchioles, f. terminal bronchioles, g. duct of alveoli, h. alveoli

A. b, c, d, e, f, g and h

B. a,b,c,d,e,f and g

C. a, b,c,d,e and f

D. a,b,c,d and e

Answer: A

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6. Fill in the blanks:

a. Humans have a pair of external nostrils opening out above the upper lips. It leads to a ...1... through the ...2...

b. The nasal chamber opens into ...3... which is a portion of pharynx. .

The ...3... Opens through glottis of the larynx region ...4...

The ...5...is a cartilagenous box which helps in

sound production and hence called the sound box

A. 1-nasal chamber, 2-nasal passage, 3-nasopharynx, 4-trachea, 5-larynx

B. 1-nasal passage, 2-nasal chamber, 3-nasopharynx, 4-trachea, 5 -Iarynx

C. l-nasal chamber, 2-nasal passage, 3-oropharynx, 4-bronchi, 5-Iayrnx

D. 1-nasal passage, 2-nasal chamber, 3-laryngopharynx, 4-pharynx, 5-larynx

Answer: A

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7. Trachea is a straight tube extending uh to the mid-thoracic cavity, which divides at the level of

A. Last thoracic vertebra into right and left 1^{o} bronchi

B. Third lumbar vertebra into right and left 1^{o} bronchiole

C. Fifth thoracic vertebra into right and left 1^{o} bronchiole

D. Fifth thoracic vertebra into right and left 1° bronchi

Answer: D

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8. Recognise the figure and {ind out the correct matching

A. e-alveoli, f-bronchus, d-bronchiole, a-trachea, c-larynx, b-epiglottis

B.) f-alveoli, d-bronchus, e-bronchiole, c-trachea, b-larynx, a-epiglottis

C. f-alveoli, e-bronchus, d-bronchiole, c-trachea, a-larynx, b-epiglottis

D. f-alvcoli, d-bronchhs, d-bronchiole, b-trachea, c-larynX, a-epiglottls

Answer: B

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9. Which of the following comprises the lungs?

a. Tracheae, b. 1° bronchi, c. 2° bronchi, d. 3° bronchi, e. initial bronchioles, f. terminal bronchioles, g. duct of alveoli, h. alveoli

A. a, b, c, d and e

B. a, b, c, d, e and f

C. a, b, c, d, e, f and g

D. a, b, c, d, e, f, g and h

Answer: A

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10. match the columnes I and II, and choose the correct combination from the optios given.

A. a-1, b-2, c-4, d-3, e-2

B. a-3, b-2, c-1, d-4, e-5

C. a-1, b-5, c-4, d-3, e-2

D. a-4, b-2, c-3, d-5, e-4

Answer: D

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11. Conducting part of the respiratory system is formed

A. From external nostrils up to the initial bronchiole

B. From external nostrils up to the terminal bronchiole

C. From external nostrils up to the duct of alveoli

D. From external nostrils up to the alveoli

Answer: B

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12. The respiratory or the exchange part of the rrespiratory system is formed by

A. From external nostrils up to the alveoli

B. From external to initial bronchioles

C. From trachea to terminal bronchioles

D. Alveoli and duct of alveoli

Answer: D

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13. What are the function of the conducting pan the respiratory system?

a. Transportation of the atmospheric air to the alveoli

b. Clears atmospheric air from foreign particles

c. Humidifles atmospheric air

d. Brings the atmospheric air to body temperature

e. Diffusion of O_2 and CO_2 between blood and atmospheric air

A. a,b and c

B. a,b,c and d

C. a, b, c, d and e

D. a, b, c and e

Answer: B

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14. Which is the site of actual diffusion of O2 and C02 between blood and atmospheric air?

A. Exchange part of respiratory system

B. Conducting part of respiratory system

C. Respiratory part of respiratory system

D. Both A and C

Answer: D

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15. The lungs are situated in a thoracic chamber which is formed dorsally by the ...a..., ventrally by the ...b..., laterally by the ..c... and on lower side by the ..d...

A. b-sternum, c-diaphragm, a-vertebral column, d-ribs

B. a-sternum, c-diaphragm, b-vertebral column, d-ribs

C. b-sternum, d-diaphragm, a-vertebral column, c-ribs

D. d-sternum, c-diaphragm, a-vertebral column, b-ribs

Answer: C

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16. The anatomical setup of lungs in thorax is such that any change in the volume of the â€¦aâ€¦ will be reflected in the â€¦bâ€¦

A. a-Thoracic cavity, b-pulmonary cavity

B. a-Pulmonary cavity, b-thoracic cavity

C. a-Thoracic cavity, b-lung cavity

D. Both A and C

Answer: D

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17. Utilisation of O_2 by the cells for catabolic reactions and resultant release of CO_2 is called

A. Breathing

B. Pulmonary ventilation

C. Cellular respiration

D. Both A and B

Answer: C

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18. The process by which O_2 rich atmospheric air is drawn in and CO_2 rich alveolar air is released out is

A. Breathing

B. Pulmonary ventilation

C. Cellular respiration

D. Both A and B

Answer: D

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19. Which is the correct sequence of steps in respiration?

a. Transport of gases by the blood

b. Breathing or pulmonary ventilation

c. Cellular respiration

d. Diffusion of O_2 and CO_2 between blood and tissues

e . Diffusion of =O_2 and CO_2 across alveolar membrane

A. $b \rightarrow e \rightarrow a \rightarrow dtoc$

B. $b \rightarrow a \rightarrow e \rightarrow c \rightarrow d$

C. $b \rightarrow dtoa \rightarrow e \rightarrow c$

D. $b \rightarrow e \rightarrow dtoa \rightarrow c$

Answer: A

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20. There is a membrane covering the lungs, called

A. Pericardium

B. Perichondrium

C. Pleural membrane/pleura

D. Peritoneum

Answer: C

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21. Match the columns and find the correct combination

A. a-I,b-ii,c-iii,d-iv

B. a-iv,b-i,c-ii,d-iii

C. a-iii,b-ii,c-iv,d-i

D. a-iv,b-ii,c-i,d-iii

Answer: B

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22. In crustacean, respiration occurs throug

A. Tracheae

B. Gills

C. Book lungs

D. Book gills

Answer: B

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23. Which of the following respires by gills.

A. Crocodile

B. Frog

C. Whale

D. Prawn

Answer: D

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24. A fully grown tadpole larva of frog respires through

A. Skin

B. Lungs

C. Gills

D. Tail fin

Answer: B

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25. Book-lungs are respiratory organs which are found in

A. Arachnida

B. Mollusca

C. Mammals

D. Earthworm

Answer: A

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26. Layer of columnar cells with uneven appearance and lining trachea is

A. Brush border epithelium

B. Stratified epithelium

C. Pseudostratified epithelium

D. Ciliated epithelium

Answer: C

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27. In Nereis, gaseous exchange occurs through

A. Parapodia

B. Gills

C. Lungs

D. Skin

Answer: A

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28. In mammal, voice is produced by

A. Bronchus

B. Syrinx

C. Larynx

D. Inhalation and exhalation

Answer: C

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29. Diffusion of oxygen in tissues of Cockroach occurs through

A. Blood

B. Integument

C. Tracheae

D. Tracheoles

Answer: D

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30. Fish brought out of water dies because of

A. Absence of pressure

B. Inability to feed

C. Inability to respire

D. Rise in temperature

Answer: C

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31. vocal cords are situated at

A. Pharynx

B. Larynx

C. Glotti

D. Bronchial

Answer: B

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32. match the columns.

A. a-r, b-s, c-q, d-p

B. a-t, b-s, c-p, d-q

C. a-r, b-S, c-q, d-t

D. a-r, b-t, c-q, d-p

Answer: A

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33. Air is breathed through

A. Trachea $\rightarrow$ lungs $\rightarrow$ larynx $\rightarrow$ pharynx $\rightarrow$ alve

B. Nose $\rightarrow$ larynx $\rightarrow$ pharynx $\rightarrow$ bronchus $\rightarrow$ alveoli $\rightarrow$ bronchioles

C. Nostrils $\rightarrow$ pharynx $\rightarrow$ larynx $\rightarrow$ trachea $\rightarrow$ bronch1 $\rightarrow$ bronchioles $\rightarrow$ alveo

D. Nose $\rightarrow$ mouth $\rightarrow$ lung

Answer: C

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Section A Topicwise Questions Topic 2 Mechanism Of Breathing Respiratory Volumes And Capacities

1. Fill in the blanks :

Breathing involves two stages. ...1... dunng vyhlc atmospheric airs drawn in and ...2...

explratxon by which alveolar air is relesed out.

b. The movement of air Into and out of the lungs is carried out by ...3... gradient between the lungs and the atmosphere.

c. Inspiration can occur if the pressure within lungs is ...4... than the atmosphere pressure i.e., there is a ...5...pressure in the lungs with respect to atmospheric pressure.

d. Expiration takes place when the intra pulmonary pressure is ...6... than atmospheric pressure.

A. l-expiration, 2-snspiration, 3-concentration, 4-lower, 5-positive, 6-higher

B. l-inspiration, 2-expiration, 3-pressure, 4-higher, 5-positive, 6-lower

C. l-inspiration, 2-expiration, 3-pressure, 4-higher, 5-negative, 6-lower

D. l-inspiration, 2-expiration, 3-pressure, 4-lower, 5-negative, 6-higher

Answer: D

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2. Ptessure within the lungs is called

A. Partial pressure

B. Intra-pulmonary pressure

C. Interstitial pressure

D. Alveolar pressure

Answer: B

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3. Pressure gradient between the lungs and atmosphere is generated by

a-diaphragm, b-external intercostal muscles, c-internal intercostal muscles, d-ribs

A. a and b

B. a and c

C. a,b and c

D. a,b,c and d

Answer: D

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4. Inspiration is initiated by the contraction of

A. External intercostal muscles .

B. Internal intercostal muscles

C. Diaphragm

D. Both A and B

Answer: C

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5. Contraction of diaphragm increases the volume of thoracic chamber in the

A. Antero-posterior axis

B. Dorso-ventral axis

C. Ventro-lateral axis

D. Dorso-lateral axis

Answer: A

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6. The contraction of .....muscles lifts up the ribs and the sternum causing an increase in the volume of the thoracic chamber in the dorso-ventral axis.

A. External intercostal muscles

B. Internal intercostal muscles

C. Diaphragm

D. Both A and B

Answer: A

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7. External and internal intercostal muscles are present in

A. Diaphragm

B. Ribs.

C. Lungs

D. Between the ribs

Answer: D

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8. Normal breathing rate of a healthy human is

A. 70-75 times/minute

B. 15-20 times/minute

C. 12-16 times/minute

D. 10-12times/minute

Answer: C

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9. In breathing movements, air volume can be estimated by

A. Stethoscope

B. Respirometer

C. Spirometer

D. Sphygmomanometer

Answer: C

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10. Additional volume of air, a person can expire by a forcible expiration is called

A. TV

B. ERV

C. IRV

D. EC

Answer: B

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11. Total volume of air a person can inspire after a normal expiration is called

A. IRV

B. ERV

C. IC

D. EC

Answer: C

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12. the amount of vloume of air that can be inspired / expired normally is called

A. TV

B. IRV

C. ERV

D. RV

Answer: A

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13. The volume of air present in the lungs after forceful expiration is called as

A. IRV

B. RV

C. FRC

D. EC

Answer: B

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14. Volume of air that remain in the lungs after a normal expiration is called

A. ERV

B. TLC

C. FRC

D. VC

Answer: C

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15. Total volume of air a person can expire after a normal inspiration is called

A. IC

B. EC

C. IRV

D. ERV

Answer: B

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16. Total volume of air accommodated in the lungs at the end of a forced inspiration is called

A. RV

B. TLC

C. ERV

D. VC

Answer: B

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17. Additional volume of air a person can inspire by a forcible inspiration is called

A. IC

B. EC

C. IRV

D. ERV

Answer: C

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18. Match the columns I and II, and choose the correct combination from the options given.

A. a-3, b-5, c-4, d-l, e-2

B. a-5, b-2, c-3, d-5, e-4

C. a-4,b-3,c-1,d-5,e-2

D. a-3, b-5, c-2, d-4, e-1

Answer: A

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19. Recognise the figure and find out the correct matching

A. a-inspiration, b-expiration

B. a-expiration, b-inspiraton

C. a-breathing, b-diffusion

D. a-diffusion, b-breathig

Answer: A

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20. Vital capacity, the maximum volume of air a person can inhale, is measured with

A. Stethoscope

B. Spirometer

C. Aspirator

D. Sphygmomanometer

Answer: B

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21. Muscles attached to diaphragm contract during inspiration to make it

A. Flat

B. Dome-shaped

C. Concave

D. Rotate

Answer: A

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22. Match the columns

A. 1-c, 2-d, 3-b, 4-a, 5-e

B. 1-c, 2-a, 3-b, 4-e, 5-d

C. 1-c,2-a, 3-d, 4-e, 5-b

D. 1-e, 2-a, 3-b, 4-e, 5-d

Answer: B

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23. Residual volume is

A. Greater than vital capacity

B. Greater than tidal volume

C. LesserGreater than IRV

D. than tidal volume

Answer: B

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24. During inspiration

A. Diaphragm and external intercostal muscles relax

B. Diaphragm and internal intercostal muscles relax

C. Diaphragm and external intercostal muscles contract

D. Diaphragm and internal intercostal muscles contract

Answer: C

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25. Forced deep breathing for a few minutes by a person sitting at rest may be followed by a temporary cessation of breathing. This is due to

A. Little Co_2 content in blood

B. High CO_2 content in blood

C. High oxygen content in blood

D. Little oxygen content in blood

Answer: A

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26. the largest quantity of air that can be expired after a maximum inspiratory effort is

A. Residual volume

B. Tidal volume

C. Vital capacity

D. Lung volume

Answer: C

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27. How much amount of air can be inspired or expired during normal breathing

A. 4.5 lt.

B. 3.5 lt.

C. 1.5 lt.

D. 0.5 lt

Answer: D

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28. Volume of air remaining in lungs after maximum respiratory effort is

A. Vital capacity

B. Residual volume

C. Total lung capacity

D. Tidal volume

Answer: B

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29. In lungs, the air is separated from the venous blood through

A. Squamous epithehum + tunica Aextema of b\ood vessel

B. Squamous epithehum + endothelium of blood vessel

C. Transitional epithehum + tunica media of blood vessel

D. Columnar epithelimn + 3 layered wa of lood. Vessel

Answer: B

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Section A Topicwise Questions Topic 3 Exchange Of Gases

1. The primary sites of gaseous exchange are

A. Trachea

B. Alveoli

C. Tissue

D. Nosttrils (nose)

Answer: B

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2. The exchange of gases in the alveoli of the lungs takes place by

A. Simple diffusion

B. Facilitated diffusion

C. Active transport

D. All of the above

Answer: A

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3. Recognise the figure and find out the correct matching

A. a-systemic arteries, b-systemic veins, c-pulmonary mtery, d-pulmonary vent

B. b-systemic arteries, a-systemic velns, d-pulmonary artery, c-pulmonarx vent

C. c-systemic arteries, d-systemlc vems, a-pulmonary artery, b-pulmonary vent

D. d-systemic arteries, c-systemlc vems, b-pulmonary artery, a-pulmonary veim

Answer: C

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4. Which of the following factors affecthe rate of diffusion?

a. Pressure gradient

b. Concentration gradient

c. Solubility of gases

d. Reactiviuty of gases

Thickness of the memberanes involved indiffion

A. a, b and c

B. a, c, d and e

C. a, b, c, and e

D. a, b, c, d and e

Answer: C

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5. Pressure contributed by an individual gas in a mixture of gases is called

A. Optimum pressure

B. Standard pressure

C. Parietal pressure

D. Partial pressure

Answer: D

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6. Recognise the figure and find outhe correct matching

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-95, d-40

Answer: A

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7. What will be the pO_2 and pCO_2 in the atmospheric air compared to those in the alveolar air?

A. pO_2 lesser, pCO_2 higher

B. pO_2 higher, pCO_2 lesser

C. pO_2 higher, pCO_2 higher

D. pO_2 lesser, pCO_2 lesser

Answer: B

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8. Findout correct match.

A. a-104, b-40, c-95, d-45, e-45, f-40

B. a-159, b-40, c-104, d-45, e-95, f-40

C. a-159,b-45, c-104, d-95, e-40, f-45

D. a-159, b-0.3, c-104, d-45, e-95, f-40

Answer: D

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9. The direction of concentration gradient for oxygen is from

A. Tissues to blood and blood to alveoli

B. Blood to tissues and tissues to alveoli

C. Alveoli to blood and blood to tissues

D. Tissues to blood and alveoli to blood

Answer: C

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10. The direction of concentration gradient for CO_2 is from

A. Tissues to Mood and blood to alveoli

B. Blood to tissues and tissues to alveoli

C. Aiveoli to blood and blood to tissues

D. Tissues to blood and alveoli to blood

Answer: A

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11. Which is not true ?

A. pCO_2 of deoxygenated blood is 95 mm Hg

B. pCO_2 of alveolar air is 40 mm Hg

C. pO_2 alveolar air is 104 mm Hg

D. pO_2 of oxygented blood is 95 mm Hg

Answer: A

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12. Recognise the figure and find out the correct matching.

A. a-endothelium, b-basement membrane, c- alveolar wall, d-pulmonary cavity

B. a-mesothelium, b-basement substance, c-alveolar wall, d-alveolar cavity

C. a-alveolar wall, b-basement membrane, c-blood capillary, d-alveolar cavity

D. a-alveolar wall, b-basement substance, c-blood capillary, d-alveolar cavity

Answer: D

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13. Gasses diffuse over the respiratory surface because of

A. po_2 is more in alveoli than in blood

B. pO_2 is more in tissues than in blood

C. pCO_2 is more in alveoli than in blood

D. pCO_2 is more in blood than in tissues

Answer: A

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14. Exchange of O_2 and CO_2 at the respiratory surface occurs through

A. Passive transport

B. Active transpon

C. Osmosis

D. Diffusion/simple diifusion

Answer: D

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Section A Topicwise Questions Topic 4 Transport Of Gases Transport Of O 2 And Co 2

1. How much percentage of CO_2 is carried by haemoglobin as carbamino-haemoglobin?

A. 0.07

B. 0.7

C. 20-25%

D. 0.97

Answer: C

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2. Read the following statements and find out the incorrect statement(s).

a. The binding of CO_2 with haemoglobin is

related to the partial pressure of CO_2. pO_2 is a major factor which could affect this binding.

b. When pCO_2 is low and pO_2 is high as in the alveoli, more binding of CO_2 occurs, whereas when the pCO_2 is high and pO_2 is low as in the tissues, dissolution of CO_2 from carbamino-haemoglobin takes place.

c. At the tissue site, where partial pressure of CO_2 is high due to catabolism, CO_2 diffuses into blood (RBCs and plasma) and forms HCO_3^- and 11 . At the alveolar site wher $pCO_2$is low, the reaction proceeds in the opposite direction leading to the formation of

CO_2 and H_2O.

d. Oxygen dissociation curve is highly useful in studying the eifect of factor like pCO_2, H^+ concentration, etc., on binding of O_2 with haemoglobin

A. a and b

B. b and c

C. c and d

D. b only

Answer: D

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3. In the alveoli, the factors favourable for the formation of oxyhaemoglobin are

a. Low pO_2 b. High pO_2

c. Low pCO_2 d. High pCO_2

e. Lower temperature f. Highertemperature

g. Low pH h. High pH

A. a,d,f,h

B. b,c,e,g

C. a, d, f, g

D. b, c, e, h

Answer: D

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4. In oxygen dissociation curve x-axis and y-axis represent

A. x-axis - partial pressure of oxygen

y-axis percentage saturation of Hb with oxygen

B. x-axis - partial pressure of oxygen

y-axis - partial pressure of oxygen

C. x-axis - partial pressure of CO_2

y-axis - percentage saturation of oxyhaemoglobin with oxygen

D. x-axis partial pressure of CO_2

y-axis - partial pressure of oxygen

Answer: A

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5. In the tissues, the factors favourable for the dissociatio of O_2 from oxyhaemoglobin are

A. a, d, f, h

B. b, c, e, g

C. a, d, f, g

D. b, c, e, h

Answer: C

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6. Oxyhaemoglobin is converted into haemoglobin during the internal respiration because

A. An enzyme splits oxyhaemoglobin

B. Oxygen tension in tissue is less than capillary blood reaching tissue

C. CO_2 tension is low in blood that reaches tissue

D. Oxyhaemoglobin is unstable

Answer: B

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7. pick the correct statement

A. Contraction of internal intercostal muscles lifts up the ribs and sternum.

B. RBCs transport oxygen only

C. Thoracic cavity is anatomically an air tight chamber.

D. Healthy man can inspire approximately 500 mL of air per minute.

Answer: C

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8. About 97 % of oxygen is transported by RBC.

The remaining 3 % is

A. Retained in lungs

B. Dissolved in plasma and transport

C. Attached to cell membrane

D. Inside mitochondria

Answer: B

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9. Decrease in pH causes O_2 dissociation curve of . haemoglobin t6 shift to

A. Left

B. Right

C. Remain unchanged

D. Oscillate erratically

Answer: B

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10. With decrease in temperature, oxyhaemoglobin curve will become

A. Straight

B. More steep

C. Parabola

D. All the above

Answer: B

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11. Chloride shift occurs in respond to

A. K^+

B. Na^+

C. H^+

D. HCO_3^-

Answer: D

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12. Under a given concentration in blood, dissociation of oxygaemoglobin will increase if

A. pH of blood rises

B. pH of blood falls

C. CO_2 concentration of blood falls

D. Free fatty acid concentration of blood falls

Answer: B

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13. In Bhor's effect curve shift to right

A. pCO_2 decrease and pO_2 increase

B. pCO_2 increase and pO_2 increase

C. pCO_3 increase and pO_2 decrease

D. pCO_2 increase and pO_2 decrease and pH increase

Answer: C

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14. Which of the following statements are true/false

A.The blood transports CO_2 comparatively easily because of its higher solubility

B.Approximately 8.9% of CO_2 is transported being dissovled in the plasma of blood

C. The carbon dioxide produced by the tissues, diffuses passively into the blood stream and passes into red blood corpsucles and react with water to form H_2CO_3

D.The chlorde ions diffuse from palsma into the erythrocytes to maintain ionic balance

A. a, c and e are true, b and d are false

B. a, c and e are false, b and d are true

C. a, b and d are true, 0 and e are false

D. a, b and d are false, c and e are true

Answer: A

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15. Amount of oxygen present in one gram of haemoglobin is

A. 20 ml

B. 1.34 ml

C. 13.4 ml

D. None of the above

Answer: B

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16. In lungs there is definiteexchange of ions between RBC and plasma. Removal of CO_2 from blood involves

A. Influx of $C1^-$ into RBC

B. Efflux of Cl^- from RBC

C. Intiux of HCO_3^- ions in RBC

D. Efflux-of HCO_3^- ions from RBC

Answer: D

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17. The process by which chloride ions pass into R.B.C. and bicarbonate ions pass out is called

A. Bicarbonate shift

B. Carbohation

C. Hamburger phenomenon

D. Carbonchiorosis

Answer: C

Watch Video Solution

18. CO_2 is carried in blood as

A. Sodium bicarbonate

B. Sodium carbonate

C. Potassium carbonate

D. Magnesium carbonate

Answer: A

Watch Video Solution

19. Dissociation curve shifts to the right when

A. H^+ concentration decrease

B. CO_2 concentration deerease

C. CO_2 concentration increase

D. Chloride concentration increase

Answer: C

Watch Video Solution

20. Oxy-haemoglobin dissociates into oxygen and deoxy-haemoglobin at

A. Low pO_2 in tissues

B. High pO_2 in tissues

C. Low pCO_2 in tissues

D. All times irrespective of pO_2

Answer: A

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21. How many molecules of oxygen are bound to one molecule of haemoglobin?

A. One

B. Two

C. Three

D. Four

Answer: D

Watch Video Solution

22. Carbon dioxide entering erythrocytes reacts with wwater to form carbonic acid.The enzyme

A. Carbonic anhydrase

B. Carboxypeptidase

C. Hydrolase

D. Oxidoreductase

Answer: A

Watch Video Solution

23. Blue copper protein complex contained in some molluscs 1n their plasma for oxygen transport is

A. Haemocyanin

B. Chlorocruorins

C. Bilimbin

D. Haemoglobin

Answer: A

Watch Video Solution

24. Determination of oxygen carried by haemoglobin is done by

A. pH of blood

B. Partial pressure of oxygen

C. Partial pressure of carbon dioxide

D. All of the above

Answer: D

Watch Video Solution

25. Ahigher CO_2 concentration of blood causes

A. Slow diffusion of O_2 from blood

B. Slow transport of O_2 in blood

C. Quick diffusion of O_2 from blood

D. Both A and B

Answer: C

Watch Video Solution

26. Bicarbonate ion is produced inside

A. Lymphocytes

B. Erythrocytes

C. Neutrophils

D. Basophils

Answer: B

Watch Video Solution

27. Haemoglobin is having maximum affinity with

A. CO

B. CO_2

C. O_2

D. NH_3

Answer: A

Watch Video Solution

28. In carbon monoxide poisoning there is

A. Increase in carbon dioxide concentratlon

B. Decrease in oxygen availabihty

C. Decrease in free haemoglobin

D. None of the above

Answer: C

 Watch Video Solution

Section A Topicwise Questions Topic 5 Regulation Of Respiration

1. Human beings have a significant ability to maintain and moderate the respiratory

rhythm to suit the demands of the body tissues. This is done by the

A. Neural system

B. Endocrine system

C. Both A and B

D. Pulmonary system

Answer: A

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2. Match the columns I and II, and choose the correct combination from the options given.

A. a-2,b-3, c-4, d-1

B. a -3,b- 1,c- 2,d -3

C. a- 1, b- 3,c- 1,d -2

D. a- 3, b- 1, c- 1, d- 3

Answer: D

View Text Solution

3. Which of the following specialised centre is primarily responsible for the regulation of respiratory rhythm?

A. Chemosensitive area

B. Respiratory rhythm centre

C. Pneumotaxic centre

D. Receptors associated withaortic arch and carotid artery

Answer: B

Watch Video Solution

4. Neural signal from which centre can reduce the duration of inspiration is

A. Chemosensitive area

B. Respiratory rhythm centre

C. Pneumotaxic centre

D. Receptors associated with aortic arch and carotid artery

Answer: C

Watch Video Solution

5. In response to CO_2 and H^+ concentration, the chemosensitive area and, receptors associated with aortic arch and carotid artery, send necessary signals for remedial actions to

A. Pneumotaxic centre

B. Apneustic centre

C. Respiratory rhythm centre

D. Both A and B

Answer: C

Watch Video Solution

6. When CO_2 concentration in blood increases breathing becomes

A. Slower and shallower breathing

B. Slower and deeper breathing

C. Faster and deeper breathing

D. No effect on breathing

Answer: C

Watch Video Solution

7. Forced deep breathing for a few minutes by a person sitting at rest may be followed by a temporary cessation of breathing. This is due to

A. Little CO_2 in blood

B. High CO_2 content in blood

C. High oxygen content in blood

D. Little oxygen content in blood

Answer: A

Watch Video Solution

8. Inspiratory centre is located in

A. Cerebrum

B. Cerebellum

C. Hypothalamus

D. Medulla oblongata

Answer: D

Watch Video Solution

9. The respiratory centre in brain which controls inspiration and expiration is situated in

" " Or

Respiratory and vomitting centres are located in

A. Cerebellum

B. Medulla oblongata

C. Hypothalamus

D. Cerebrum

Answer: B

Watch Video Solution

10. The respiratory centre in the 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

Answer: B

 Watch Video Solution

11. If the CO_2 concentration in the blood increases, the breathing shall

A. Increase

B. Decrease

C. Stop

D. No effect

Answer: A

Watch Video Solution

12. Respiratory movements are contro\\ed by

A. Cerebellum

B. Cerebrum

C. Medulla oblongata

D. Cmra cerebri

Answer: C

Watch Video Solution

Section A Topicwise Questions Topic 6 Disorders Of Respiratory System

1. Which of the following is an Occupational Respiratory Disorder (ORD) ?

A. Emphysema

B. Asthma

C. Lung fibrosis

D. All of the above

Answer: C

Watch Video Solution

2. In which disease, due to flattening of tracheal vessels, alveoli are deprived of oxygen " " Or

Name the pulmonary disease in which alveolar surface area involved in gas exchange is drastically reduced due to damage in the alveolar walls

A. Pneumonia

B. Emphysema

C. Asthma

D. Bronchitis

Answer: C

Watch Video Solution

3. Lungs are not affected by the disease

A. Pneumonia

B. Bronchitis

C. Polio

D. Asthma

Answer: C

Watch Video Solution

4. Alveoli become enlarged and damaged with reduced surface area in heavy smokers. The condition is called

A. Silicosis

B. Emphysema

C. Asthma

D. Bronchitis

Answer: B

Watch Video Solution

5. SARS is caused by the variant of

A. Pneumococcus pneumonia

B. Common cold corona virus

C. Asthma

D. Bronchitis

Answer: B

Watch Video Solution

Section B Assertion Reasoniing Questions

1. Assertion : — The amount of CO_2 that can diffuse through the diffusion membrane per unit differnece in partial pressure is much higher compared to that of O_2.

Reason : – The solubility of CO_2 is 20-25 times higher than that of O_2 solubility.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A

Watch Video Solution

2. Assertion: The diffusion membrane is made up of three major layers namely, the thin squamous epithelium of alveoli, the endothelium of alveolar capillaries and the basement membrane in between

Reason: The total thickness of the diffusion membrane is much greater than a millimetre.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D

 Watch Video Solution

3. Assertion: All the factors in our body are favourable for diffusion of O_2 from alveoli to tissues and that of CO_2 from tissues to alveoli.

Reason: The role of oxygen in the regulationf respiratory rhythm is quite significa

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: C

 Watch Video Solution

4. Assertion: O_2 can bind with haemoglobin in an irreversible manner to form oxyhaemoglobin.

Reason: Binding of oxygen with haemoglobin is . primarily related to partial pressure of CO_2

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D

 Watch Video Solution

5. Assertion: Every 100 ml of oxygenated blood can deliver around 4 ml of O_2 to tissues under normal physiologieal conditions.

Reason: Every 100 ml of deoxygenated blooddelivers approx1mately 5 ml of CO_2 to the alveoli.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D

 Watch Video Solution

6. Assertion: Emphysema is a chronic respiratory disorder in which respiratory surface is decreased.

Reason: In emphysema, alveolar walls are damaged

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of

the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A

Watch Video Solution

7. Assertion : Asthma is a difficulty in breathing caushing wheezing.

Reason : Asthma occurs due to inflammation of bronchi and bronchioles.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A

 Watch Video Solution

8. Assertion: Chemosensitive area is situated adjacent to l the rhythm centre which ishighly sensitiveo CO_2 and 1 hydrogen ions.

Reason: Receptors associated with aortic arch and carotidis artery can recognise changes in O_2 and H^+ concentration and send necessary signals to the rhythm centre for remedial actions.

A. If both assertion and reason are true and the reason is the correct

explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: C

 Watch Video Solution

9. Assertion: RBCs contains a very high concentration of the enzyme, carbonic anhydrase and minute quantities of the same is present in the plasma too.

Reason: Carbonic anhydrase catalyse the formation of carbonic acid from H_2O and CO_2

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B

 Watch Video Solution

10. Assertion: O_2 gets bound to haemoglobin in the lung surface and gets dissociated at the tissues.

Reason: CO_2 trapped as bicarbonate at the tissue 1 and transported to the alveoli is released out as CO_2.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B

 Watch Video Solution

Section D Chapter End Test

1. In which of the following subjects,the deadspaceis the highest?

A. Old man

B. Old woma

C. Young woman

D. Young man

Answer: D

Watch Video Solution

2. Wind pipelarises from

A. Larynx

B. Nasopharynx

C. Oropharynx

D. Laryngopharynx

Answer: A

 Watch Video Solution

3. Chloride shiit is called

A. Bohr effect

B. Haldane effect

C. Hamburger's phenomenon

D. Co-toxicity

Answer: C

 Watch Video Solution

4. Which is true?

A. H^+ ons releasedfrom carbonic acid combine with haemoglobin to form haemoglobinic acid.

B. Oxyhaemoglobin of erythrocytesis alkaline

C. More than 70 % of carbondioxide is transferred from tissueto lungs as carbamino compounds.

D. In healthyperson,haemoglobin content is more than 25 g/ 100 ml.

Answer: A

View Text Solution

5. Whether a child died after birth or died before birth can be coniirmed by measuring

A. Residual volume of air

B. Tidal volume

C. Dead space air

D. Weight of child

Answer: A

 Watch Video Solution

6. A respiratory disease is

A. Cancer

B. Arthritis

C. Polio

D. Asthma

Answer: D

Watch Video Solution

7. Lungs have a large number of narrow tubescalled

A. Alveoli

B. Bronchioles

C. Bronchi

D. Alveolar ducts

Answer: B

 Watch Video Solution

8. Which is incorrect?

A. Presenceof non-respiratoryair sacsincrease efficiency of respiration in birds

B. In insects, circulatingbody tiuids serveto distribute oxygento tissues.

C. Principal of counter-current flow facilitates effcient respiration in gills of fishes.

D. Residual air in lings slightly decreases the efficiency of respiration in mammals.

Answer: D

Watch Video Solution

9. Maximum amount of oxygen is lost from the blood in the

A. Arteries of body

B. Capillaries surrounding the alveoli

C. Left auricle of heart

D. Capillaries surrounding the tissues

Answer: D

 Watch Video Solution

10. Protective respiratory blast is

A. Â Hiccunping

B. Â Sneezing

C. Coughing

D. All of the above

Answer: B

Watch Video Solution

11. What is the approximate normal composition of alveolar air ?

A. $14\ \%\ O_2, 6\ \%\ CO_2, 80\ \%\ N_2$Â

B. $16\ \%\ O_2, 3\ \%\ CO_2, 81\ \%\ N_2$Â

C. $21\ \%\ O_2, 2\ \%\ CO_2, 77\ \%\ N_2$Â

D. $10\ \%\ O_2, 8\ \%\ CO_2, 82\ \%\ N_2$Â

Answer: A

Watch Video Solution

12. CO_2 concentration is

A. More in expired air than in alveolar air

B. More in alveolar air than in expired air

C. More in inspired air than in alveolar air

D. More in inspired air than in expired air

Answer: B

Watch Video Solution

13. Arytenoid cartilage occurs inÂ

A. Larynx

B. Nose

C. Hyoid

D. Sternum

Answer: A

 Watch Video Solution

14. Apnoea is

A. Decreased ventilation

B. Absence of breathing

C. Laboured breathing

D. Increased ventilation

Answer: B

Watch Video Solution

15. Metabolic rate will be highest inÂ

A. Elephant

B. Rat

C. Horse

D. Human

Answer: B

Watch Video Solution

16. The cells which do not respire .Â

A. Epidermal cells

B. Sieve cells

C. Cortical cells

D. Erythrocytes

Answer: D

Watch Video Solution

17. Oxygen carried by blood is liberated in

A. Â Arteries

B. Capillaries of body

C. Capillaries of lungsÂ

D. HeartÂ

Answer: B

Watch Video Solution

18. Adamâ€™s apple representsÂ

A. Arytenoid cartilage of larynx

B. Cricoid cartilage of larynx

C. Thyroid cartilage of larynx

D. All of the above

Answer: C

Watch Video Solution

19. Haemoglobin is a

A. Vitamin

B. Skin pigment

C. Blood carrier

D. Respiratory pigment

Answer: D

Watch Video Solution

20. Compound soluble in water which does not impede oxygen transporation is

A. SO_2

B. SO_3

C. CO

D. NO

Answer: A

Watch Video Solution

21. pCO_2 released from body is

A. 15 mm Hg

B. 23 mm Hg

C. 30 mm Hg

D. 70 mm Hg

Answer: C

Watch Video Solution

22. Â Inner/ahzleolar surface area of human lungs isÂ

A. $1m^2$

B. $10m^2$

C. $100m^2$

D. $1000m^2$

Answer: C

Watch Video Solution

23. Normal breathing in calledÂ

A. Apnoea

B. Dyspnoea

C. Eupnoea

D. Hyperpnoea

Answer: C

Watch Video Solution

24. A child was killed through asphyxiation. PostmortemÂ confmned it because a piece of lung put in water

A. Settled down

B. Kept floating

C. Had blood spots

D. None of the above

Answer: B

Watch Video Solution

25. Lungs have a large number of alveoli for

A. Having spongy texture and proper shapeÂ

B. More surface area for diffusion of gasesÂ

C. More space for increasing volume of inspired air

D. More nerve supplyÂ

Answer: B

Watch Video Solution

26. Division of mammalian lungs into a very large number of tiny alveoli around alveolar ducts opening into brondchioles, is

A. Â Inemcient system of ventilation with little of residual airÂ

B. Inefiicient system of ventilation with high percentage of residual airÂ

C. An efficient system of ventilation with no residual air .Â

D. An efficient system of ventilation with little residual air

Answer: D

Watch Video Solution

27. The toxic effect of carbon monoxide is due to its greater affinity for haemoglobin as compared to oxygen approximately by

A. 1000 timesÂ

B. Â 200 to 250 times

C. 20 timesÂ

D. Â 2 timesÂ

Answer: B

Watch Video Solution

28. During expiration, the diaphragm becomes

A. Flsttened

B. Relaxed

C. Straightened

D. Arched/Dome-shaoed

Answer: D

Watch Video Solution

29. Common factors in the trachea of mammals and insects is

A. Ciliated inner lining

B. Non-collapsible wall

C. Paired nature

D. Origin from head region

Answer: B

Watch Video Solution

30. Respiratory system is derived from

A. Endoderm

B. Mesoderm

C. Â EctodermÂ

D. None of the above

Answer: A

Watch Video Solution

31. Which is correct?Â

A. Respiratory centres are not affected by

CO_2

B. In human vital capacity is just double the expiratory volume.

C. A human lung has 10^3 alveoli.

D. During inspiration the lungs act as a suction pump.

Answer: D

Watch Video Solution

32. Residual air mostly occurs inÂ

A. Alveoli

B. Bronchus

C. Nostrils

D. Trachea

Answer: A

33. Oxygen haemoglobin dissociation curve will shift to right on decrease of

A. Acidity

B. Carbon dioxide

C. Temperature

D. pH

Answer: D

Watch Video Solution

34. he amount of air that moves in and out of the lungs, with each nermal inspiration and expiration is calledÂ

A. Residual volume

B. Vital capacity

C. Tidal volume

D. Tidal capacity

Answer: C

Watch Video Solution

35. Mammalian lungs have an enormous number of minute alveoli (air sacs). This is to allow

A. Â Increasing volume of inspired airÂ

B. Keeping the lungs in proper shapeÂ

C. Higher number of muscles to provide greater elasticityÂ

D. Increasing surface area for gaseous diffusionÂ

Answer: D

Watch Video Solution

36. Hamburger phenomenon is also known as

A. HCO_3^- shift

B. Na^+ shift

C. H^+ shift

D. Chloride shift

Answer: D

Watch Video Solution

37. Carbonic anhydrase is mostly active inÂ

A. RBC

B. WBC

C. Blood plasma

D. Blood platelets

Answer: A

Watch Video Solution

38. Oxygen carrying capacity of blood isÂ

A. 0.2

B. 0.3

C. 0.4

D. 0.5

Answer: A

View Text Solution

39. At higher O_2 concentration, oxygen dissociation curve of haemoglobin will '

A. Move to left

B. Move to right

C. Become irregular

D. Move upwardly

Answer: A

Watch Video Solution

40. Chloride shift is essential for the transport of

A. Â NitrogenÂ

B. OxygenÂ

C. Carbon dioxideÂ

D. Carbon dioxide and oxygenÂ

Answer: C

Watch Video Solution

41. In which of these animals, skin serves as an accessory organ of respiration

A. HumansÂ

B. Frog

C. Rabbit

D. LizardÂ

Answer: B

Watch Video Solution

42. The alveolar epithelium in the lung is

A. Â Non-ciliated columnarÂ

B. Â Non-ciliated squamousÂ

C. Ciliated columnarÂ

D. Ciliated squamous

Answer: B

Watch Video Solution

43. Percentage of oxygen supplied by haemoglobin is

A. 0.97

B. 1

C. 0.49

D. 0.03

Answer: A

Watch Video Solution

44. Percentage of haemoglobin in RBCs is

A. 0.03

B. 0.1

C. 0.28

D. 0.35

Answer: C

Watch Video Solution

45. Oxygen and carbon dioxide are transported in blood through

A. Platelets and corpuscles

B. RBCs and WBCs

C. WBCs and serum

D. RCBs and plasma

Answer: D

 Watch Video Solution

46. Body tissues obtain oxygen from haemoglobin because of its dissociation in tissues caused byÂ

A. Low oxygen concentration and high carbon dioxide concentration

B. Low oxygen concentration

C. Low carbon dioxide concentration

D. High carbon dioxide concentration

Answer: A

 Watch Video Solution

47. During transport of CO_2, blood does not becom due toÂ

A. Neutralisation of H_2CO_3 by Na_2CO_3

B. Absorption by leucocytes

C. Blood buffers

D. Non-accumulation

Answer: C

Watch Video Solution

48. Vital capacity of lungs isÂ

A. 4.5-5.5 l

B. 3.5-4.5 l

C. 2.5-3.9 l

D. 1.5-2.5 l

Answer: B

 Watch Video Solution

49. At the time of inspiration, the diaphragm

A. Expands

B. Contracts

C. Relaxes

D. Does not undergo any change

Answer: B

 Watch Video Solution

50. Which energy is consumed in breathing?

A. Â Mechanical

B. ChemicalÂ

C. Â Bioelectricity

D. Physical

Answer: B

Watch Video Solution

Others

1. Pneumotaxic centre is present on

A. Cerebellum

B. Cerebrum

C. Medulla oblongata

D. Pons varolii

Answer: D

Watch Video Solution

2. Which one of the following mammalian cells is not capable of metabolising glucose to carbon-dioxide aerobically ?

A. WBC

B. RBC

C. Liver cells

D. Unstriated muscle cells

Answer: B

Watch Video Solution

3. Arrange the following in the order of increasing volume

1) Tidal volume

2) Redidual volume

3) Expiratory reserve volume

4) Vital capacity

A. 1lt2lt3lt4

B. 1lt4lt3lt2

C. 1lt3lt2lt4

D. 1lt4lt2lt3

Answer: C

Watch Video Solution

4. Vital capacity of lungs is

A. Inspiratory reserve volume plus expiratory reserve volume

B. Inspiratory reserve volume plus' tidal volume

C. Total lung capacity minus expiratory reserve volume

D. Total lung capacity minus residual volume

Answer: D

Watch Video Solution

5. Oxygen carrying capacity of blood is reduced by

A. CO_2

B. CO

C. SO_2

D. O_3

Answer: B

Watch Video Solution

6. Lack of pulmonary surfactant produces

A. Asthma

B. Cystic fibrosis

C. Respiratory distress syndrome

D. Emphysema

Answer: D

Watch Video Solution

7. In the resting person saturation of haemoglobin as blood leaves the tissure capillaries is approximately

A. 0.25

B. 0.4

C. 0.46

D. 0.75

Answer: D

Watch Video Solution

8. Epithelium lining bronchiole is

A. Pseudostratified columnar

B. Pseudostratiiied sensory

C. Squamous sensory

D. Cuboidal and columna

Answer: A

Watch Video Solution

9. Major part of CO_2 is transported to respiratory surface

A. HCO_3^- ions

B. H_2CO_3

C. Hb CO_2

D. Free CO_2

Answer: A

Watch Video Solution

10. Carboxyhaemoglobin is produced due to

A. CO

B. CO_2

C. NO_3^-

D. SO^{3-}

Answer: A

Watch Video Solution

11. Which is correct?

A. During inspiration, external intercostal muscles and diaphragm contract

B. Cyanosis means collapse of alveoli

C. Eupnoea is slow breathing

D. Coryza is caused by human corona virus

Answer: A

12. Between breaths the interpleural pressure is approximately ..... mm Hg less than atmospheric pressure

A. 1

B. 4

C. 8

D. 10

Answer: B

View Text Solution

13. the partial pressure of oxygen in the alveolar air is

A. 45 mm Hg

B. 125 mm Hg

C. 100 mm Hg

D. 104 mm Hg

Answer: D

Watch Video Solution

14. Listed below are four respiratory capacities (a-d) and four Jumbled respiratory volumes of a normal human adult.

Which one is a correct matching ?

A. (c) 1200 mL, (d) 2500 mL

B. (d) 3500 mL, (a) 1200 mL

C. (a) 4500 mL, (b) 3500 mL

D. (b) 2500 mL, (c) 4500 mL

Answer: B

View Text Solution

15. Which of the following statement is true about RBCs in humans?

A. They transport 99.5% of O_2

B. They transport 80% oxygen, the rest 20%being transport by plasma

C. They do not carry CO_2 at all.

D. They carry 20-25% of CO_2

Answer: D

Watch Video Solution

16. In human beings, the number of lobes in right and left lungs are

A. 2 and 3

B. 2 and 2

C. 3 and 2

D. 4 and 2

Answer: C

Watch Video Solution

17. Hiccough (hiccup) is due to activity of

A. Intercostal muscles

B. Food in air tract

C. Diaphragm/Jerky incomplete inspiration

D. Inadequate oxygen in environment

Answer: C

 Watch Video Solution

18. Which structure of lungs is directly involved in O_2/CO_2 exchange between air and blood capillaries?

A. Bronchi

B. Trachea

C. Alveoli

D. Secondary bronchi

Answer: C

Watch Video Solution

19. Which can bind several hundred times more strongly to haemoglobin than oxygen?

A. CO_2

B. CO

C. H_2CO_3

D. SO_2

Answer: B

Watch Video Solution

20. When oxygen supply to tissues is inadequate, the condition

A. Dyspnoea

B. Asphyxia

C. Hypoxia

D. Apnoea

Answer: C

Watch Video Solution

21. Inner surface of bronchi, bronchioles and fallopian tubes is lined by

A. Columnar epithelium

B. Squamous epithelium

C. Cubical epithelium

D. Ciliated epithelium

Answer: D

Watch Video Solution

22. Asthma is characterised by

A. Spasm in bronchial muscle

B. Damage in diaphragm

C. Alveolar wall degradation

D. Pain in lungs

Answer: A

Watch Video Solution

23. Emphysema is a

A. Cardiovascular diseas

B. Pulmonary diseas

C. Renal disease

D. Neural dlsease

Answer: B

Watch Video Solution

24. Amount of CO_2 in expired air is about

A. 0.0004

B. 0.0003

C. 0.21

D. 0.045

Answer: D

Watch Video Solution

25. Dead space air in man is

A. 1.5 l

B. 500 ml

C. 0.21

D. 150ml

Answer: D

Watch Video Solution

26. With conscious efforts one can?

A. Breathe out air totally without oxygen.

B. Breathe in and out by moving diaphragm alone without moving ribs at

all.

C. Breathe out air through eustachian tube by closing both nose and mouth.

D. Empty the lungs completely by breathing out all air out of them.

Answer: B

View Text Solution

27. A person starts coughing suddenly while swallowing some food. It could be due to improper movement of

A. Neck

B. Diaphragm

C. Tongue

D. Epiglottis

Answer: D

Watch Video Solution

28. A large proportion of oxygen is left unused the human blood even after its uptake by the body tissue. This O_2

A. Is enough to keep oxyhaemoglobin saturation at 96%

B. Helps in releasing more oxygen to epithelial tissues

C. Acts as a reserve during muscular exercise

D. Raise pCO_2 of blood to 75 mm Hg

Answer: C

Watch Video Solution

29. What percentages of CO_2 is transported by RBCs ?

A. 0.7

B. 20-25%

C. 0.07

D. 0.97

Answer: B

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30. What percentage of Co_2 is transported as bicarbonate HCO_3^- ?

A. 70%

B. 7%

C. 20-25%

D. 97%

Answer: A

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31. High percentage of CO_2 anti very low percentage of O_2 may make a person unconsolous due

A. Eupnoea

B. Emphysema

C. Suffocation

D. Asphyxia

Answer: D

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32. The two organisms which breathe only through their moist skin are

A. Frog and Earthworms

B. Fishand Frog

C. Fishand Earthworm

D. Leech and Earthworm

Answer: D

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33. the volume of air which remains in the conducting airways and is not available for gas exchange is called

A. Vital capacity

B. Anatomic dead space

C. Functional residual capacity

D. Forced expiratory volume

Answer: B

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34. Surfactant

A. Protein produced by type II alveolar cells

B. Excessivein many premature infants causing difficulty in breathing

C. Decrease surface tension of fliuid lining alveoli

D. Lacking in individualssuffering from acute respiratory distress syndromes

Answer: C

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35. What is correct about human respiration?

A. About 90% of CO_2 is carried by haemoglobin as carbaminohaemoglobin.

B. Neural signals from pneumatoxic centre of pons can increase duration of inspiration

C. Workers in grindingand stone breaking industries may suffer from lung fibrosis.

D. Cigarette smokingleads to inllammation of bronchi.

Answer: C

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36. Increased body temperature makes oxygen haemoglobin dissociation curve to

A. Shift right

B. Shift left

C. Become parabolic

D. Become hyperbolic

Answer: A

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37. Oxygen bindingto haemoglobin

A. Directly proportional to CO_2 concentration

B. Directly proportional to CO concentration

C. Inversely proportional to CO_2 concentration

D. Independent of CO concentration

Answer: C

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38. Vital capacity of lungs is

A. IRV + ERV + TV

B. IRV + ERV + TV- RV

C. IRV + ERV + TV + RV

D. IRV + ERV

Answer: A

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39. Respiratory membrane consists of

A. Alveolar wall and ducts

B. Membranes of alveolar ducts and capillaries

C. Inner and outer pleural membranes and pleural fluid

D. Alveolar wall, alveolar capillary and interstitial space

Answer: D

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40. the enzyme essential for the transport for the transport of CO_2 as dicarbonate in blood is

A. Carboxypeptidase

B. Succinicdehydrogenase

C. Carbonic anhydrase

D. Thrombokinase

Answer: C

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41. In humans, which among these is not a step in respiration

A. Pulmonary ventilation

B. Transport of gases by blood

C. Utilisation of CO_2 by cells for catabolic reactions

D. Alveolar diffusion of O_2 and CO_2

Answer: C

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42. Expiratory capacity is

A. Tidal volume

B. Residual volume

C. ERV

D. TV + ERV

Answer: D

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43. Alveoli occur in

A. Lungs

B. Liver

C. Kidney

D. Brain

Answer: A

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44. Amount of oxygen supplied by $100ml$ arterial blood while passing through the tissues is

A. 0.4-0.6 ml

B. 4-6 ml

C. 14-15 ml

D. 19-20 ml

Answer: D

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45. After forceful inspiration, the amount of air that can be breathed out by maximum forced expiration is equal to

A. TV + RV + ERV

B. IRV + TV + ERV

C. IRV + RV + ERV

D. IRV + ERV + TV + RV

Answer: B

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46. People migrated from planes to hills six months back

A. Possess more RBCs with haemoglobin of low O_2 binding afiinity

B. Possess same RBCs with haemoglobin of high O_2 binding affinity

C. Loose physical fitness to play games like football

D. Suffer from altitude sickness with nausea and fatigue

Answer: A

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47. The major fraction of CO_2 released during cellular respiration is transported by the blood to the lung capillaries

" " Or

Approximately seventy percent of carbon-

dioxide absorbed by the blood will be transported to the lungs

A. As carbamino-haemoglobin

B. As bicarbonate ions

C. In the form of dissolved gas molecules

D. By binding to R.B.C.

Answer: B

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48. Carbonic anhydrase is mostly active in

A. Lymphocytes

B. Blood plasma

C. Erythrocytes

D. Leucocytes

Answer: C

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49. In which disease, due to flattening of tracheal vessels, alveoli are deprived of oxygen " " Or

Name the pulmonary disease in which alveolar surface area involved in gas exchange is drastically reduced due to damage in the alveolar walls

A. Emphysema

B. Pneumonia

C. Asthma

D. Pleurisy

Answer: A

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50. Which one of the following animals has two separate circulatory pathways

A. Lizard

B. Whale

C. Shark

D. Frog

Answer: B

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51. In the graphical representation of pulmonary Volumes and capacities, 'x' denotes

A. Inspiratory reserye volume

B. Total lung capacity

C. Expiratory capacity

D. Inspiratory capacity

Answer: D

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52. When you hold your breath, which of the following gas changes in blood would first lead to the urge to breathe

A. Falling CO_2 concentration

B. Falling CO_2 and falling O_2 concentration

C. Falling O_2 concentration

D. Increasing CO_2 concentration

Answer: D

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53. Carbon dioxide is carried in blood

A. As dissolved gas

B. As bicarbonates

C. In combination with haemoglobin

D. All of the above

Answer: D

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54. Which of the following binds with haemoglobin irreversibly?

A. Carbon dioxide

B. Oxygen

C. Carbon monoxide

D. Nitrogen

Answer: C

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55. Dissociation of oxyhaemoglobin in blood increases when there is

A. Increase in pH and decrease in CO_2 concentration

B. Decrease in temperature and increase in O_2 concentration

C. Increase in O_2 concentration and decrease in CO_2 concentration

D. Decrease in pH and increase in CO_2 concentration

Answer: D

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56. Name the chronic respiratory disorder caused mainly by cigarette smoking

A. Emphysema

B. Asthma

C. Respiratory acidosis

D. Respiratory alkalosis

Answer: A

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57. The partial pressure of oxygen in the alveoli of the lungs is

A. Less than that in the blood

B. Less than that of carbon dioxid

C. Equal to that in the blood

D. More than that in the blood

Answer: D

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58. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because

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

Answer: D

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59. Lungs are made up of air-filled sacs, the alveoli . They do not collapse even after forceful expiration because of

A. Inspiratory Reserve Volume

B. Tidal Volume

C. Expiratory Reserve Volume

D. Residual Volume

Answer: D

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60. Which of the following options correctly represents the lung conditions in asthma and emphysema, respectively

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.

Answer: A

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61. Match the items given in Column I with those in Column II and select the correct

option given below

A.

	a	b	c	d
A	iii	ii	i	iv

B.

	a	b	c	d
B	iii	i	iv	ii

C.

	a	b	c	d
C	i	iv	ii	iii

D.

	a	b	c	d
D	iv	iii	ii	i

Answer: B

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62. Which of the following is an Occupational Respiratory Disorder (ORD) ?

A. Anthrams

B. Silicosis

C. Botulism

D. Emphysema

Answer: B

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63. The diagram below represents part of a capillary in a specific region of the human body. The region labeled X represents part of

A. a glomerulus

B. an alveolus

C. a villus

D. the liver

Answer: B

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64. In humans, the concentration of carbon dioxide in the plasma

A. causes increased production of hydrochloric acid

B. regulates gastric acid production by forming carbonic acid

C. regulates breathing rate by its effect on the medulla

D. causes inflammation of the tissues of the bronchial tubes

Answer: C

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65. If the respiratory rate of 'A' is 35 breaths/min and tidal volume 185 cc/breath and of 'B' is 25 breaths/min and tidal volume 259 cc/breath then

A. Pulmonary ventilation of 'A' and 'B' is same

B. Alveolar ventilation of 'A' and 'B' is same

C. Pulmonary ventilation of 'A' is greater than 'B'

D. Alveolar ventilation of 'A' is greater than 'B'

Answer: C

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66. Oxyhaemoglobin can transport

A. 8 ml of CO_2/ 100 ml blood

B. 5 ml of CO_2/ 100 ml blood

C. 3 m1 of CO_2/1 00 ml blood

D. 2 m1 of CO_2/100 ml blood

Answer: C

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67. Which of the following match is correct?

A. Emphysema: reduction of surface area of alveoli and bronchi

B. Pneumonia: occupational disease with asbestos

C. Silicosis: inflammation of alveoli

D. Asthma: excessive secretion of bronchial mucus

Answer: A

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68. Much developed larynx of human male is called

A. Aristole's lantern

B. Syrinx

C. Adam's apple

D. Muller's organ

Answer: C

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69. Volume of air breathed in and out during normal breathing is called

A. Vital capacity

B. IRV

C. ERV

D. Tidal volume

Answer: D

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70. Hiccups can be best described as

A. forceful sudden expiration

B. forceful contraction of intercostal muscles during deep breathing

C. Vibration of the soft palate during breathing while sleeping

D. jerky incomplete inspiration

Answer: D

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71. Assertion : In mammals, complex respiratory system has developed.

Reason : Mammalian skin is impermeable to gases.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion

B. If both assertion and reason are true but reason is not. a correct explanation of

the assertion

C. If the assertionis true but reasonis false

D. If both the assertionand reasonare false.

Answer: B

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72. Assertion : Inspiration occurs due to muscular relaxation.

Reason : During inspiration, the diaphragm

and external intercostal muscle contract simultaneously.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion

B. If both assertion and reason are true but reason is not. a correct explanation of the assertion

C. If the assertionis true but reasonis false

D. If both the assertionand reasonare false.

Answer: C

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