# BIOLOGY

# BOOKS - MODERN PUBLISHERS

# BIOLOGY (HINGLISH)

# BREATHING AND EXCHANGE OF GASES

## Practice Problems

**1.** Anaerobic respiration produces less energy than aerobic respiration.

Watch Video Solution

**2.** Internal respiration is called a physico-chemical process . Why ?

Watch Video Solution

**3.** What is significance of respiratory pigment in respiration ?

Watch Video Solution

**4.** Which type of respiration is found in the earthworm ?

Watch Video Solution

**5.** Name the respiratory structures of cockroach.

Watch Video Solution

**6.** In insects, inspiration is called a passive process while expiration is called active process . Why ?

Watch Video Solution

**7.** Name three types of gills found in the prawn.

Watch Video Solution

**8.** Give the significance of presence of turbinates in the nasal chambers.

Watch Video Solution

**9.** At puberty , the male is with deeper voice ?

Watch Video Solution

**10.** Name the peritoneal covering of the lung.

Watch Video Solution

**11.** Name the respiratory surface in the human lung .

Watch Video Solution

**12.** What is average rate of respiration in a normal adult man ?

Watch Video Solution

**13.** Name the inspiratory muscles of man.

Watch Video Solution

**14.** Define a holobranch.

Watch Video Solution

**15.** What is bronchial intercom?

Watch Video Solution

**16.** What is the amount of air of tidal volume and alveolar volume in a normal person?

Watch Video Solution

**17.** Give the percentage of $O_2$ is atmospheric and alveolar air.

Watch Video Solution

**18.** Give the partial pressure of $O_2$ in atmospheric air and alveolar air .

Watch Video Solution

**19.** What is pulmonary gas exchange ?

Watch Video Solution

**20.** State the $P_{O_2}$ and $P_{CO_2}$ in the blood after the pulmonary gas exchange.

Watch Video Solution

**21.** Name the factors which favour the dissociation of oxyHb at the body cells.

Watch Video Solution

**22.** What do you mean by loading of oxygen in blood?

Watch Video Solution

**23.** State the $P_{O_2}$ and and $P_{CO_2}$ in the blood after tissue respiration.

Watch Video Solution

**24.** Name two forms by which $O_2$ is transported by blood from the lungs to body tissue.

Watch Video Solution

**25.** How many molecules of oxygen can be maximally bound with one molecule of Hb of blood ?

Watch Video Solution

**26.** Name the factors which favour binding of $O_2$ with Hb at the lung level.

Watch Video Solution

**27.** What is the shape of oxygen dissociation curve of haemoglobin?

Watch Video Solution

**28.** What is Bohr's effect?

Watch Video Solution

**29.** What is amount of $O_2$ per decilitre of oxygenated and deoxygenated blood ?

Watch Video Solution

**30.** Name three forms by which $CO_2$ is transported by blood from body tissues to the lungs .

Watch Video Solution

**31.** What is the main form in which $CO_2$ transported by blood ?

Watch Video Solution

**32.** What is the significance of chloride shift ?

Watch Video Solution

**33.** Give the location of inspiratory and expiratory centres.

Watch Video Solution

**34.** Give the symptoms of respiratory disorder asthma.

Watch Video Solution

**35.** State the major difference between anaemic hypoxia and histotoxic hypoxia.

Watch Video Solution

## Ncert File Exercise Questions

**1.** Define vital capacity. What is its significance?

Watch Video Solution

**2.** State the volume of air remaining in the lungs after a normal breathing.

Watch Video Solution

**3.** Diffusion of gases occurs in the alveolar region only and not in the other parts of

respiratory system. Why?

Watch Video Solution

**4.** What are the major transport mechanisms for $CO_2$? Explain.

Watch Video Solution

**5.** What will be the $P_{O_2}$ and $P_{CO_2}$ in the atmospheric air compared to those in the alveolar air ?

A. $P_{o_2}$ lesser, $P_{co_2}$ higher

B. $P_{o_2}$ higher , $P_{co_2}$ lesser

C. $P_{o_2}$ higher, $P_{co_2}$ hogher

D. $P_{o_2}$ lesser, $P_{co_2}$ lesser

**Answer: B**

Watch Video Solution

**6.** Explain the process of inspiration under normal conditions.

Watch Video Solution

**7.** How is respiration regulated?

Watch Video Solution

**8.** What is the effect of $pCO_2$ on oxygen transport?

Watch Video Solution

**9.** What happens to the respiratory process in a man going up a hill?

Watch Video Solution

**10.** What is the site of gaseous exchange in an insect?

Watch Video Solution

**11.** Define oxygen dissociation curve. Can you suggest any reason for its sigmoidal pattern?

Watch Video Solution

**12.** Have you heard about hypoxia? Try to gather information about it, and discuss with your friends.

Watch Video Solution

**13.** Distinguish between

(a) IRV and ERV

(b) Inspiratory capacity and Expiratory capacity

(c) Vital capacity and Total lung capacity

Watch Video Solution

**14.** What is Tidal volume? Find out the Tidal volume (approximate value) for a healthy human in an hour.

Watch Video Solution

## Ncert Exemplar Problems Multiple Choice Questions

**1.** Respiration in insects Is called direct because

A. The tissues exchange $O_2/CO_2$ directly with the air in the tubes

B. The tissues exchange $O_2/CO_2$ directly with coelomic fluid

C. The tissues exchange $O_2/CO_2$ directly with the air outside through body surface

D. Tracheal tubes exchange $O_2/CO_2$ directly with tissues

**Answer: D**

Watch Video Solution

**2.** Regarding the functions of our respiratory system, mark the wrong entry

A. Humidifies the air:

B. Warm ap the air

C. Diffusion of gases

D. Cleans up the air

**Answer: D**

Watch Video Solution

**3.** A person suffers punctures in his chest cavity in an accident, without any damage to the lungs its effect could be

A. Reduced breathing rate

B. Rapid increase in breathing rate

C. No change in respiration

D. Cessation of breathing

**Answer: D**

Watch Video Solution

**4.** It is known that exposure to carbon monoxide is harmful to animals because

A. It reduces $CO_2$ transport

B. It reduces $O_2$ transport

C. In increases $CO_2$ transport it destroys haemoglobin

D. It destroys haemoglobin

**Answer: B**

Watch Video Solution

**5.** Mark the true statement among the following with reference to normal breathing.

A. Inspiration is a passive process where as expiration is active

B. Inspiration is an active process where as expiration is passive

C. Inspirationand expiration are active processes

D. Inspiration and expiration are passive processes.

**Answer: B**


**6.** A person breathes in some volume of air by forced inspiration after having a forced expiration. This quantity of air taken in is

A. Total lung capacity

B. Tidal volume

C. Vital capacity

D. Inspiration capacity

**Answer: A**

Watch Video Solution

**7.** Mark the incorrect statement in context to $O_2$ binding to Hb:

A. Higher ph

B. Lower temperature

C. Lower $P_{co_2}$

D. Higher $P_{o_2}$

**Answer: D**

Watch Video Solution

**8.** Mark the correct pair of muscles involed in the normal breathing in humans

A. External and internal internal internal muscles

B. Diaphragm and abdominal muscles

C. Diaphragm and internal intercostal muscles

D. Diaphragm and extrnal intercostal muscles

**Answer: D**

Watch Video Solution

**9.** Incidence of Emphysema - a respiratory disorder is high in cigarette smokers. In such cases

A. The bronchioles are found dameged

B. The alveolar walls are found damaged

C. The plasma membrane is found damaged

D. The respiratory muscles are found damaged

**Answer: B**

Watch Video Solution

**10.** Respiratory process is regulated by certain specialized centres in the brain. One of the following listed centres can reduce the inspiratory duration upon stimulation

A. Medullary inspiratory center

B. Pneumotaxic center

C. Apneustic center

D. Chemosensitive center

**Answer: B**

Watch Video Solution

**11.** $CO_2$ dissocated from carbamino haemoglobin when

A. $P_{co_2}$ is high & $P_{o_2}$ is low

B. $P_{co_2}$ is high and $P_{co_2}$ is low

C. $P_{co_2}$ and $P_{o_2}$ are equal

D. None of the above

**Answer: B**

Watch Video Solution

**12.** In breathing movements, air volume can be estimated by

A. Stethoscope

B. Hygrometer

C. Sphignomanometer

D. Spirometer

**Answer: D**

Watch Video Solution

**13.** Identify the correct and incorrect match abount respiratory volumes and capacities and mark the correct answer :- A. Inspiratory capacity (IC) = TV + RV B. Vital capacity (V.C.) = TV + IRV + ERV C. Residual volume (R.V.) = VC – IRV D. Tidal volume (TV) = IC – IRV

A. Inspiratory capacity(IC) = tidal volume +residual volume.

B. Vital capacity (VC) = Tidal volume (tV)+ inspiratoryreserve volume (IRV) + Expiratory Reserve volume (EVR).

C. Residual volume (RV) =vital capacity(vc)- inspiratory reseve volume (IRV).

D. Tidal volume (TV) = inspiratory capacity(ic)- Inspiratory reserve volume (IRV).

**Answer: B**

Watch Video Solution

**14.** The oxygen - haemoglobin dissociation curve will show a right shift in case of

A. High $P_{co_2}$

B. high $P_{o_2}$

C. Low $P_{co_2}$

D. Less $H^+$ concentretion

**Answer: A**

Watch Video Solution

## Ncert Exemplar Problems Very Short Answer Type Questions

**1.** Define the following terms?

(a) Tidalvolume

(b) Residualvolume

(c) Asthma

Watch Video Solution

**2.** A fluid filled double membranous layer surrounds the lungs. Name it and mention its important function.

Watch Video Solution

**3.** Name the primary site of exchange of gases in our body?

Watch Video Solution

**4.** Cigarette smoking causes emphysema. Give reason.

Watch Video Solution

**5.** What is the amount of $O_2$ supplied to tissues through every 100 ml. of oxygenated blood under normal physiological conditions?

Watch Video Solution

**6.** A major percentage (97%) of $O_2$ is transported by RBCs in the blood. How does the remaining percentage (3%) of $O_2$ transported?

Watch Video Solution

**7.** Arrange the following terms based on their volumes in an asceding order.

(a) Tidal volume (TV)

(b) Residual volumn (RV)

(c ) Inspiratory Reserve volumn (IRV)

(d) Expiratory Capacity (EC)

Watch Video Solution

**8.** complete the missing terms.

(a) Inspiratory capacity $(IC) = \ldots\ldots\ldots\ldots\ldots + IRV$

(b) $\ldots\ldots\ldots\ldots\ldots = TV + IRV + ERV$

(c ) Functional residual capacity $(FRC) = ERV + \ldots\ldots\ldots\ldots$

Watch Video Solution

**9.** Name the organs of respiration in the following organism:

(a) Flatworms = ---------- (c) frog =--------

(c) Cockraoch =--------

Watch Video Solution

**10.** Name the important parts involved in creating a pressure gradient between lungs and the atmosphere during normal respiration.

Watch Video Solution

## Ncert Exemplar Problems Short Answer Type Questions

**1.** State the different modes of $CO_2$ transport in blood.

Watch Video Solution

**2.** Compared to $O_2$ diffusion rate of $CO_2$ through the diffusion membrane per unit difference in partial pressure is much higher. Explain.

Watch Video Solution

**3.** For completion of respiration process, write the given steps in sequential manner:

(a) Diffusion of gases ($O_2$ and $CO_2$) cross alveolar membrane.

(b) Transport of gases by blood.

(c) Utilisation of $O_2$ by the cells for catabolic reactions and resultant release of $CO_2$.

(d) Pulmonary ventilation by which atmospheric air is drawn in and $CO_2$ rich alveolar air is released out.

(e) Diffusion of $O_2$ and $CO_2$ between blood and tissues.

Watch Video Solution

**4.** Differentiate between

(a) Insiratory and expiratory reserve volume

(b) Vital capacity and total lung capacity.

(c ) Emphysema and occupational respiratory disorder.

Watch Video Solution

## Ncert Exemplar Problems Long Answer Type Questions

**1.** Explain the transport of $O_2$ and $CO_2$ between alveoli and tissue with diagram.

Watch Video Solution

**2.** Explain the mechanism of breathing with neat labelled sketches.

Watch Video Solution

**3.** Explain the role of neural system in regulation of respiration.

Watch Video Solution

## Higher Order Thinking Skills Brain Twisting Very Short Answer Questions

**1.** Why is respiration called a physicochemical process?

Watch Video Solution

**2.** What is significamce of respiratory pigment present in the blood?

Watch Video Solution

**3.** Which type of epithelium is present in the trachea?

Watch Video Solution

**4.** Which organisms show trachea respiration?

Watch Video Solution

**5.** State one difference between right lung and left lung.

Watch Video Solution

**6.** What is bronchial intercom?

Watch Video Solution

**7.** Which respiratory muscles are called principal respiratory muscles and why?

Watch Video Solution

**8.** Define coefficient of utilization.

View Text Solution

**9.** Why is carbonic acid more formed inside the RBCs Than in plasma ?

Watch Video Solution

**10.** Which factor cause faster and deeper respiration?

Watch Video Solution

## Higher Order Thinking Skills Brain Twisting Short Answer Questions

**1.** Why is nasal respiration more advantageous than mouth respiration?

Watch Video Solution

**2.** How the more active cells meet their energy requirements in comparison to less active cells?

Watch Video Solution

**3.** Why the composition of alveolar air is different from that of atmospheric air?

Watch Video Solution

**4.** Describe the inspiration phase of normal respiration.

Watch Video Solution

**5.** Oxygen- dissociation curve of thepersons living at high altitudes is at higher level than those living in the plains.

Watch Video Solution

**6.** Discuss the mechanism of transport of oxygen by blood.

Watch Video Solution

**7.** Write the mechanism of pulmonary gas exchange .

Watch Video Solution

**8.** Write a note on bronchial intercom of lung .

Watch Video Solution

**9.** Differentiate between :

(i) IRV and ERV (ii) Residual volume and function residual volume .

Watch Video Solution

**10.** Define oxygen dissociation curve . Describe Bohr's effect.

Watch Video Solution

## Higher Order Thinking Skills Brain Twisting Lomg Answer Questions

**1.** Enumerate the nervous control and chemical control of rate of respiration .

Watch Video Solution

**2.** Write notes on the followings.

(i) Transport of $CO_2$ by blood

(ii) Respiratory membrane .

Watch Video Solution

## Quick Memory Test Write True Or False

**1.** A person can expel all the air from the lungs.

Watch Video Solution

**2.** Vital capacity respresents the maximum capacity to ventilate the lungs.

Watch Video Solution

**3.** Respiration is a physical process and depends upon the principle of diffusion .

Watch Video Solution

**4.** Fishes respire through skin.

Watch Video Solution

**5.** A rise in $P_{CO_2}$ increases the oxygen - affinity of haemoglobin.

Watch Video Solution

**6.** Gas exchange continue uninterrupted in the lungs even after a forceful expiration.

Watch Video Solution

**7.** Oxyhaemoglobin can bind much less $CO_2$ in the form of carbaminohaemoglobin than what deoxyhaemoglobin can.

Watch Video Solution

**8.** Turbinals of nasal chamber of bronchial intercom are bronchioles.

Watch Video Solution

**9.** In insects, the expiration is an active process while inspiration is a passive process.

Watch Video Solution

**10.** Finest branches of bronchial intercom are bronchioles.

Watch Video Solution

**11.** The alveolar air has less oxygen but more $CO_2$ than inspired air.

Watch Video Solution

**12.** Inspiratory reserve volume is the volume of air which can be inspired in addition to the normal inspiration.

Watch Video Solution

**13.** Vital capacity is a measure of maximum inspiration.

Watch Video Solution

**14.** Carbon dioxide cannot be transported with haemoglobin.

Watch Video Solution

**15.** Chemosensitive area of respiratory centre in medulla is affected of both $CO_2$ and $H^+$ ions.

Watch Video Solution

## Quick Memory Test Complete The Missing Links

**1.** The lungs are covered by .....membranes.

Watch Video Solution

**2.** Amount of air inspired or expired in a normal breath is .....

Watch Video Solution

**3.** The sites of respiration inside the lung are ..... .

Watch Video Solution

**4.** Respiratory organ of insects are : —

Watch Video Solution

**5.** Leeches respire through.....while prawns respire through..... .

Watch Video Solution

**6.** Diaphragm contracts to help in .....while the contraction of adbominal muscles in help in..... .

Watch Video Solution

**7.** .....acts as air conditions.

Watch Video Solution

**8.** .....elements is present at the centre of Hb.

Watch Video Solution

**9.** The volume of air left in lungs after maximum expiration is called.....while the volume of air breathed out during a normal restful respiration is called..... .

Watch Video Solution

**10.** Alveolar $P_{o_2}$ is.....than the venous $P_{o_2}$ while artierial $P_{o_2}$ is .....than the alveolar $P_{o_2}$.

Watch Video Solution

**11.** vital capacity of trained athletes is .....than that of non-athletes while the vital capacity of non-smokers is .....than that of smokers.

Watch Video Solution

**12.** Oxygen is mainly transported as..... .

Watch Video Solution

**13.** .....is respiratory organ of earthworm.

Watch Video Solution

**14.** .....ml of oxygen is transported per decilitre of blood.

Watch Video Solution

**15.** Total lung capacity is

Watch Video Solution

## Quick Memory Test Choose The Correct Alternative

**1.** External respiration is Physical/Physiochemical Process.

Watch Video Solution

**2.** Nasal chambers/nostrils act as air conditioners.

Watch Video Solution

**3.** Cartilage rings supporting the trachea are c-shaped and are dorsally/ventrally incomplete.

Watch Video Solution

**4.** Tracheal respiration is found in insects/all arthropods.

Watch Video Solution

**5.** Each lung is covered by pericardium/pleura.

Watch Video Solution

**6.** Sites of respiration are bronchioles/alveoli.

Watch Video Solution

**7.** Internal intercostal muscles are expiratory/inspiratory muscles.

Watch Video Solution

**8.** Residual volume/Functional Residual volume is amount of air left in the lung alveoli after normal expiration.

Watch Video Solution

**9.** Alveolar air has more/less oxygen than atmospheric air.


**10.** Initial pressure difference for oxygen than atmospheric air.

**11.** Oxygen Dissocaition curve is normally sigmoid/parabolic.

Watch Video Solution

**12.** Decrease in $P_{co_2}$ moves the oxygen dissociative curve towards right side/left side.

Watch Video Solution

**13.** $CO_2$ is mainly transported as bicarbonate/medulla.

Watch Video Solution

**14.** Chemosensitive area is located in hypothalamus/medulla.

Watch Video Solution

**15.** Cigarette smoking causes emphysema/asthma.

Watch Video Solution

## Revision Exercises Very Short Answer Questions

**1.** Name the sac which surrounds the lungs.

Watch Video Solution

**2.** Give values of tidal volume , vital capacity, residual volume and total lung capacity in man.

Watch Video Solution

**3.** What is the voice box of man?

Watch Video Solution

**4.** Name three forms in which $CO_2$ is transported by the blood.

Watch Video Solution

**5.** Give values of Alveolar $P_{o_2}$ Venous $P_{co_2}$ and Alveolar $P_{co_2}$.

Watch Video Solution

**6.** Give the position of diaphragm during inspiration and expiration.

Watch Video Solution

**7.** What is aim of Chloride - bicarbonate shift ?

Watch Video Solution

**8.** Give the term for percentage of oxygen used by the body tissues.

Watch Video Solution

**9.** Which respiratroy disease is characterized by spasm of bronchial muscles?

Watch Video Solution

**10.** Why there are more RBC count in the people living at high altitudes than those living in the plains ?

Watch Video Solution

**11.** Name the inspiratory muscles which help in pulmonary ventilation in man.

Watch Video Solution

**12.** What is Respiratory quoteint?

Watch Video Solution

**13.** What do you mean by co-poisoning ?

Watch Video Solution

**14.** Where are inspiratory and expirtory centres located ?

Watch Video Solution

**15.** Give another name for chloride shift.

Watch Video Solution

**16.** Name the respiratory organs of dolphin, scorpion and insects.

Watch Video Solution

**17.** Define bohr's effect.

Watch Video Solution

**18.** How many molecules of oxygen can be transported by one molecule of haemoglobin?

Watch Video Solution

**19.** Differentiation between tracheoles and bronchioles.

Watch Video Solution

**20.** Give the term for the volume of air inhaled and exhaled during a normal effortless breathing.

Watch Video Solution

**21.** Name the respiratory organs of leech and prawn.

Watch Video Solution

**22.** What is carbamino -hemoglobin?

Watch Video Solution

**23.** What is vital capacity in regard to breathing ?

Watch Video Solution

**24.** The venous blood in the lungs has a $P_{CO_2}$ of 46 mm Hg. Should the alveoalr $P_{CO_2}$ exceed or be less than 46 mm. Hg to result in diffusion of $CO_2$ from the blood in the alveolus ?

View Text Solution

**25.** Define vital capacity of lung.

Watch Video Solution

**26.** Which lung has a cardiac notch?

Watch Video Solution

**27.** How is haemoglobin differently located in humans and earthworms ?

Watch Video Solution

**28.** What prevents collapsing of our trachea during breathing ?

Watch Video Solution

**29.** Name the enzyme , which acts on carbonic acid in living cells.

Watch Video Solution

**30.** What is residual volume? How much is it in a normal adult man?

Watch Video Solution

## Revision Exercises Short Answer Questions

**1.** Differentiate between vital capacity and total lung capacity .

Watch Video Solution

**2.** List the conditions of respirations for the respiratory surface.

Watch Video Solution

**3.** Why is cutaneus respiraiton most imprtant mode of respiraiton in forg.

Watch Video Solution

**4.** What is pleura ? List its functions .

Watch Video Solution

**5.** What is meant by vital capacity ? List and two categoreis of people which possess higher vital capacity.

Watch Video Solution

**6.** What is the role of carbonic anhydrase enzyme in the transport of gases during respiration ?

Watch Video Solution

**7.** Discuss the advantage of nose breathing over mouth breathing.

Watch Video Solution

**8.** How air is cleaned in the nasal chambers?

Watch Video Solution

**9.** Define the following : (a) tidal volume (b) vital capacity.

Watch Video Solution

**10.** Write down the route adopted by the foul air , while moving out of the lungs in the atmosphere.

Watch Video Solution

**11.** Give the scientific name of pathogen causing Diphteria. How is it transmitted ?

Watch Video Solution

**12.** What is meant by Respiration Quotient (RQ) ? When will the value of RQ be 1 and when will it be less than 1 ?

Watch Video Solution

**13.** What is role of carbonic anhydrase Where is it operative ?

Watch Video Solution

**14.** What is meant by vital capacity ? List and two categoreis of people which possess higher vital capacity.

Watch Video Solution

**15.** How are respiratory gases transported in the human blood ?

Watch Video Solution

**16.** Define : (a) Tidal volume (b) Residual Volume .

Watch Video Solution

**17.** Where is carbonic anhydrase located ? What is its function ?

Watch Video Solution

**18.** Where is pneumotaxic centre located in human brain ? What is its significance ?

Watch Video Solution

**19.** What is chloride shift ? Write its significance during respiration.

Watch Video Solution

**20.** How does exchange of gases occurs at lung surface .

Watch Video Solution

**21.** Differentiate between :

(i) Inspiratory muscles and expiratory muscles.

(ii) Inspired air and alveolar air .

Watch Video Solution

**22.** Differentiate between :

(i) Inspiratory capacity and expiratory capacity.

(ii) Carbaminohaemoglobin and carboxyhaemoglobin.

Watch Video Solution

**23.** Tabulate the respiratory organs and modes of respiration found in various groups of animals.

Watch Video Solution

**24.** Differentiate between :

(i) Positive pressure breating and Negative pressure breathing .

(ii) Right lung and left lung.

Watch Video Solution

**25.** Differentiate between :

(i) Residual volume and Minute volume .

(ii) Inspiratory reserve volume and expiratory reserve volume .

Watch Video Solution

**26.** Give cause and symptoms of following respiratory disorders:

(i) Asthma . (ii) Emphysema.

Watch Video Solution

**27.** Write a note on neural regulation of respiration .

Watch Video Solution

**28.** How does haemoglobin help in the transport of oxygen from lung to tissue?

Watch Video Solution

**29.** How are respiratory gases transported in the human blood ?

Watch Video Solution

**30.** Give a brief account of morphology of human lungs.

Watch Video Solution

**31.** Write the role of diaphragm and intercostal muscles in breathing process.

Watch Video Solution

**32.** Define the following and give their values in a normal adult man :

(i) Tidal volume (ii) Expiratory reserve volume (iii) Inspiratory capacity.

Watch Video Solution

**33.** How does the exchange of gases occur in respiration between blood and alveolar air.

Watch Video Solution

## Revision Exercises Long Answer Questions

**1.** Explain bronchial intercom present inside the lung.

Watch Video Solution

**2.** Describe the respiratory tract and give the function of various parts of it.

Watch Video Solution

**3.** Enumerate the nervous control and chemical control of rate of respiration .

Watch Video Solution

## Competition File Multiple Choice Questions Mcqs

**1.** How many ATP molecules could maximally be generated from one molecule of glucose, if the

complete oxidation of one mole of glucose to $CO_2$ and $H_2O$ yields 686 kcal and the useful chemical energy available in the high energy phosphate bond of one mole of ATP is 12 kcal

A. Two

B. Thirty

C. Fifty seven

D. One

**Answer: C**

Watch Video Solution

**2.** People living at sea level have around $5$ million RBC per cubic millimetre of their blood whereas those living at an altitude of $5400$ metres have around $8$ million. This is because at high altitude.

A. People get pollution free air to breather and more oxygen is availble .

B. Atmospheric $O_2$ level is less and hence more RBCs are needed to absorb the required amount of $O_2$ to survive

C. There is more UV - radition which enhances RBC - production.

D. People eat more nutritive food , so more RBCs are formed .

**Answer: B**

Watch Video Solution

**3.** Which one of the following statements in incorrect ?

A. The residual air in lungs slightly decrease the efficiency of respiration in mammals

B. The presence of non - respiratory air sacs increase the efficiency of respiration in birds

C. In insects , cirulating body fluids serve to distribute oxygen to tissue .

D. The principle of counter - current flow facilitates cells is transported to the

lungs.

**Answer: C**

Watch Video Solution

**4.** The majority of carbon dioxide produced by our body cells is transported to the lungs -

A. Dissolved in blood

B. As bicarbonates

C. As carbonates

D. Attached to haemoglobin

**Answer: B**

Watch Video Solution

**5.** In which of the following animals, respiration occurs without any respiratory organ ?

A. Frog

B. Fish

C. Cockroach

D. Earthworm

**Answer: D**

 Watch Video Solution

**6.** The total number of alveoli in both the lungs is

A. 3000

B. 30000

C. 500000000

D. 700000000

**Answer: D**

Watch Video Solution

**7.** Membrane separating air in pulmonary alveoli from blood capillaries is :

A. Alveolar epithelium

B. Cardiac epithelium

C. Capillary endothelium

D. Both (a) &(b)

**Answer: D**

Watch Video Solution

**8.** During hibernation , frog respires through :

A. Gills

B. Lungs

C. Integument

D. Tympanum

**Answer: C**

Watch Video Solution

**9.** 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 are true , c and e are false

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

**Answer: A**

Watch Video Solution

**10.** Breathing becomes faster in fever because .

A. Fever stimulates the respiratory centre of brain

B. $O_2$ carrying capacity becomes lower

C. Increase in temperature increases metabolic rate requiring more oxygen

D. Oxygen is used in fighting the germs

**Answer: B**

Watch Video Solution

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

A. Red blood cells

B. White blood cells

C. Unstriated muscle cells

D. Liver cells

**Answer: A**

Watch Video Solution

**12.** Increased asthmatic attacks in certain seasons are related to

A. Low temperature

B. Hot and humind environment

C. Eating fruits preseved in containers

D. Inhalation of seasonl pollens

**Answer: D**

Watch Video Solution

**13.** Arrange the following in the order of increasing volume

1) Tidal volume

2) Redidual volume

3) Expiratory reserve volume

4) Vital capacity

A. $1 < 2 < 3 < 4$

B. $1 < 3 < 2 < 4$

C. $1 < 4 < 3 < 2$

D. $1 < 4 < 2 < 3$

**Answer: B**

Watch Video Solution

**14.** Hypoxia is the condition in which less oxygen becomes available to the tissue this may be due to

A. Lesser oxygen in the atmosphere

B. More Co in the air

C. Less RBCs in blood

D. All of the above

**Answer: D**

Watch Video Solution

**15.** Which of the following factors raise the $P_{50}$ value and shfits the $HbO_2$ dissociation curve to right and vice versa :

(1) Rise in $P_{CO_2}$ (2) Rise in $H^+$ ions (Fall in pH)

.

( 3) Fall in temperature (4) Fall in diphosphoglyceric acid .

A. 1,2 and 3 are correct

B. 1 and 2 are correct

C. 2 and 4 are correct

D. 1 and 3 are correct

**Answer: B**

Watch Video Solution

**16.** RBCs and adipose tissue cells respire anaerboically because they :

(1) Possess very few mitochondria .

(2) Require much less energy .

(3) Possess very few mitochondria and a large amount of energy.

(4) Possess carbonic anhydrase .

A. 1,2 and 3 are correct

B. 1 and 2 are correct

C. 2 and 4 are correct

D. 1 and 3 are correct

**Answer: B**

Watch Video Solution

**17.** When $CO_2$ concentration in blood increases breathing becomes

A. Shallower and slower

B. There is no effect on breathing

C. Slow and deep

D. Faster and deeper

**Answer: D**

 Watch Video Solution

**18.** Blood analysis of a patient reveals an unusually high quantity of carboxyhemoglobin content. Which of the following conclusion is the most likely to be correct? The patient has been inhaling poliuted air containing unusually high content of

A. Carbon disulphate

B. Chloroform

C. Carbon dioxide

D. Carbon monoxide

**Answer: B**

Watch Video Solution

**19.** Vital capacity of lung is

A. TV + IRV + ERV

B. TV + IRV + RV

C. TV + ERV

D. IRV + ERV

**Answer: A**


**20.** During normal respiration, without any effort, the volume of air insipred or expired is called

A. Tidal Volume

B. Reserve volume

C. Residual volume

D. None of the above

**Answer: A**

Watch Video Solution

**21.** Chloride shift occurs in respond to

A. $HCO_3^-$

B. $K^+$

C. $H^+$

D. $Na^+$

**Answer: A**

Watch Video Solution

**22.** Oxygen dissociation curve is

A. Parabolic

B. Hyperbolic

C. Sigmoid

D. Straight

**Answer: C**

Watch Video Solution

**23.** During inspiration, the diaphragm

A. Expands

B. Shows no change

C. Contracts and flattens

D. Relaxes to become dome - shaped

**Answer: C**

Watch Video Solution

**24.** The oxygen toxicity is related with

A. Blood poisoing

B. Collaspsing of alveolar wall

C. Failure of ventillation of lungs

D. Both (a) and (b)

**Answer: C**

Watch Video Solution

**25.** Lungs have a large number of narrow tubescalled

A. Alveoli

B. Bronchioles

C. Bronchi

D. Trachease

**Answer: B**

Watch Video Solution

**26.** Residual volume is

A. Lesser that tidal volume

B. Greater than inspiratory volume

C. Greater that vital capacity

D. Greater that tidal volume

**Answer: D**

Watch Video Solution

**27.** Which of the following statement is not true ?

A. The partial pressure of oxygen in deoxygenated blood is 40 mm Hg

B. The partial pressure of oxygen in deoxygenated blood is 95 mm Hg

C. The partial pressure of oxygen in alveolar air is 104 mm Hg

D. The partial pressure of $CO_2$ in deoxygenated blood is 40 mmHg.

**Answer:**

Watch Video Solution

**28.** Vital capacity of lungs includes :

A. IRV + TV + ERV

B. ERV + RV

C. IRV + TR

D. RV+ ERV + TV + IRV

**Answer: A**

Watch Video Solution

**29.** When temperature decrease, oxy-Hb curve becomes

A. More steep

B. Staright

C. Parabola

D. all of the above

**Answer: A**

Watch Video Solution

**30.** Pneumotaxic centre is present on

A. Cerebrum

B. Cerebellum

C. Medulla

D. Pons Varoli

**Answer: D**

Watch Video Solution

**31.** Haemoglobin is a

A. Reproductive pigment

B. Respiratory pigment

C. Residual volume

D. Fat

**Answer: B**

Watch Video Solution

**32.** Hamburger shift is also called :

A. Bicarbonate shift

B. Chloride shift

C. Potassium shift

D. All of these

**Answer: B**

Watch Video Solution

**33.** After deep inspiration, capacity of maximum expiration of lung is called : –

A. Vital capacity

B. Tidal volume

C. IRV

D. ERV

**Answer: A**

Watch Video Solution

**34.** what is vital capacity of our lungs

A. Inspiratory reserve volume + Expiratory reserve volume

B. Total lung capacity - Reisdual volume

C. Inspiratory reserve volume + Tidal volume

D. Total lungs capacity - Expiratory reserve volume

**Answer: B**

Watch Video Solution

**35.** When $CO_2$ concentration in blood increases breathing becomes

A. Shallower and slow

B. There is no effect on breathing

C. Slow and deper

D. Faster and deeper

**Answer: D**

Watch Video Solution

**36.** Hamburger shift is also called :

A. Chloride shift

B. Bicarbonate shift

C. Potassium shift

D. All of the above

**Answer: A**

 Watch Video Solution

**37.** After deep inspiration, capacity of maximum expiration of lung is called : —

A. Tidal volume

B. Vital capacity

C. IRV

D. ERV

**Answer: B**

Watch Video Solution

**38.** Which one of the following is the sweetest sugar or laevorotatory suger

Or

Inulin is a polymer of

A. Glucose

B. Surcose

C. Fructose

D. Maltose

**Answer: C**

Watch Video Solution

Watch video solution

**39.** If R. Q. is less than 1.0 in a respiratory metabolism it would mean that

A. Carbohydrates are used as repiratory substrate

B. Organic acids are used as respiratory substrate

C. The oxidation of respiratory substate consumed less oxygen than amount of

$CO_2$ released

D. The oxidation of respiratory consumed less oxygen than amount of $CO_2$ released

**Answer: C**

Watch Video Solution

**40.** The number of gills present in Osteichthyes is

A. 2 pairs

B. 6-15 pairs

C. 5 pairs

D. 4 pairs

**Answer: D**

Watch Video Solution

**41.** Alveoli of lungs are lined by

A. Simple epithelium

B. Squamous epithelium

C. Cuboidal epithelium

D.

**Answer: B**

Watch Video Solution

**42.** About $97\%$ of $O_2$ is transported by RBC. The remainging $3\%$ is

A. Dissolved in plasma transported

B. Remains in lungs

C. In peroxisomes

D. Attaced to cell membrance

**Answer: A**

Watch Video Solution

**43.** The major amount of $CO_2$ in both invertebrates and verterbrates is transported as :

A. Carbonic acid

B. Carbonminohaemoglobin

C. Bicarbonates

D. None of these

**Answer: C**

Watch Video Solution

**44.** Respiratory quotient (R.Q) is one in case of

:

A. Fatty acids

B. Nucleic acids

C. Carbohydrates

D. Organic acids

**Answer: C**

Watch Video Solution

**45.** One haemoglobin carries how many molecules of $O_2$ ?

A. Four

B. Two

C. Eight

D. Six

**Answer: A**

Watch Video Solution

**46.** Oxygen in carried by :

A. Leucocytes

B. Erythrocytes

C. Platelets

D. None of these

**Answer: B**

 Watch Video Solution

**47.** The epithelial tissue present on the inner surface of bronchioles and fallopian tubes is

A. Cuboidal

B. Glandular

C. Ciliated

D. Squamous

**Answer: C**

Watch Video Solution

**48.** Aerobic respiratory pathway is appropriately termed :

A. Catabolic

B. Parabolic

C. Amphibolic

D. Anabolic

**Answer: C**

Watch Video Solution

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

A. Tidal Volume

B. Vital capacity

C. Residual volume

D. Normal volume

**Answer: A**

Watch Video Solution

**50.** The majority of $CO_2$ is transported into blood as

A. Bicarbonates

B. Sulphates

C. Oxalates

D. Citrates

**Answer: A**

Watch Video Solution

**51.** Which of the following is called Hamburger's shift ?

A. Hydrogen shift

B. Bicarbonate shift

C. Chloride shift

D. Sodium

**Answer: C**

Watch Video Solution

**52.** How many heme molecules are present in one molecule of haemoglobin ?

A. 1

B. 2

C. 3

D. 4

**Answer: D**

Watch Video Solution

**53.** $CO_2$ is transported in blood mostly by means of :

A. Plasma

B. Bicarbonate ion

C. Carbonminohaemoglobin

D. None of these

**Answer: B**

Watch Video Solution

**54.** The volume of air inspired during normal respiration is called :

A. Tidal Volume

B. Insipratory reseve volume

C. Expiratory reserve volume

D. Residual volume

**Answer: A**

 Watch Video Solution

**55.** Accoding to Boyle's law, the product of pressure and volume is a constant. Hence,

A. It the volume of the lungs is increased, the pressure decrease proportionately

B. If the volume of the lungs is incresed , the pressure also increases proportionately

C. If the volume of the lungs in increased , the pressure decreases disproportionately

D. If the volume of the lungs is increased , the pressure remains same

**Answer: A**

Watch Video Solution

**56.** Which of the following statements is correct ?

A. During inspiration , external intercostal muscless and diaphragm contract

B. Cyanosis means collapse

C. Eurpose means slow breathing

D. Coryza is caused by human corona virus.

**Answer: A**

Watch Video Solution

**57.** The urge to inhale in humans results from

A. Rising $P_{CO_2}$

B. Rising $O_2$

C. Falling $P_{CO_2}$

D. Falling $P_{O_2}$

**Answer: A**

Watch Video Solution

**58.** Hamburger's phenomenom is called :

A. Bicarbon shift

B. Chloride Shift

C. Hydrogen shift

D. Sodium shift

**Answer: B**

Watch Video Solution

**59.** Breathing rate in human is controlled by :

A. Thalamus

B. Hypothalamus

C. Cerebellum

D. Medulla oblongata

**Answer: D**

Watch Video Solution

**60.** In which of the following subject , the dead space is highest ?

A. Old man

B. Old woman

C. Young man

D. Young woman

**Answer: C**

Watch Video Solution

**61.** Which of the following is the carbonic anhydrase ?

A. Fe

B. Zn

C. Cu

D. Mg

**Answer: B**

Watch Video Solution

**62.** Skin is an accesssory organ of respiration in

A. Humans

B. Frogs

C. Rabbit

D. Lizard

**Answer: B**

Watch Video Solution

**63.** Between breaths, the intrapleural pressure is approximately ..... Mm Hg less than atmospheric pressure.

A. 1

B. 4

C. 8

D. 10

**Answer: B**

Watch Video Solution

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

A. Acts as a reserve during muscular exercise

B. Raises the $pCO_2$ of blood to 75 mm of Hg

C. Is enough to keep oxyhemoglobin saturation at 96%

D. Helps in releasing more $O_2$ to the epithelial tissues

**Answer: A**

Watch Video Solution

**65.** Two friends are eating togeather on a dinning table. One of them suddenly starts coughing while swallowing some food. This coughing would have been due to improper movement of

A. Epiglottis

B. Diaphragm

C. Milk

D. Tongue

**Answer: A**

 Watch Video Solution

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

A. CO

B. $CO_2$

C. $SO_2$

D. $H_2CO_3$

**Answer:**

Watch Video Solution

**67.** Pneumotaxic centre which can moderate the functions of the respiratory rhythm centre is present at

A. Pons region of brain

B. Thalamus

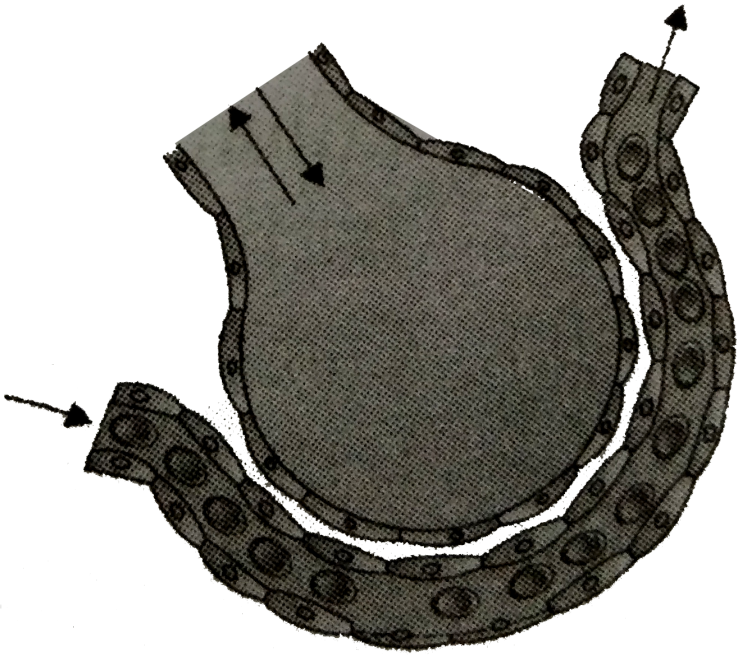
C. Spinal cord

D. Right cerebral hemisphere

**Answer: A**

Watch Video Solution

**68.** The factor which does not affect the rate of alveolar diffusion is



A. Solubility of gases

B. Thickness of membranes

C. Concentration gradient

D. Reactivity of gases

**Answer:**

Watch Video Solution

**69.** Congestion of the lungs is one of the main symptoms in

A. Hypotension

B. Coronary heart disease

C. Angina

D. Heart failure

**Answer: D**

Watch Video Solution

**70.** Dead space air in man is

A. 500 ml

B. 150 ml

C. 250 ml

D. 1.5 l

**Answer: B**

Watch Video Solution

**71.** Amount of $CO_2$ in expired air is about

A. 0.0004

B. 0.0003

C. 0.036

D. 0.21

**Answer: C**

Watch Video Solution

**72.** Emphysema is a

A. Cardiovascular disease

B. Pulmonary disease

C. Neural disease

D. Renal disease

**Answer: B**

Watch Video Solution

**73.** Which one of the following is the correct statement for respiration in humans ?

A. Cigarette smoking may lead to inflammation of bronchi

B. Neutral singals from pneuomtaxic centre in pons region of brain can increases the duration of inspiraiton

C. Workers in the grinding and stone - breaking industries suffer from lung

fibrosis.

D. About 90% of $CO_2$ is carried by haemoglobin as c arbminohaemoglobin

**Answer: C**

Watch Video Solution

**74.** People who have migrated from the planes to an area adjoining Rohtang pass about six months back

A. Have more RBCs and their haemoglobin has lower binding affinity to $O_2$

B. Are not physically fit to play games like football

C. Suffer from altitude sickness with symptoms like nausea , fatigue , etc.

D. Have more RBCs and their haemoglobin has lower binding affinity to $O_2$

**Answer: A**

Watch Video Solution

**75.** which of the following in correct regarding respiration in adult frog ?

A. In water - skin and gills

B. On land -skin and buccal cavity

C. In water - skin and buccal cavity

D. On land - skin , lungs and gills

**Answer: B**

 Watch Video Solution

**76.** Oxygen binding to haemoglobin in blood is

A. Directly prpportional ot conentraiton of $CO_2$ in the medium

B. Inversely proporitonal to concentration of $CO_2$ in the medium

C. Directly proportional to concentration of CO in the medium

D. Independent of concentration of CO in the medium

**Answer: B**

Watch Video Solution

**77.** Select the correct statement :

A. Particulate matter of size $10\mu$m can cause severe damage to the lungs

B. Particulate matter of size greater than $2.5\mu m$ can get trapped in the lungs and cause problems

C. Particulate matter size less than $2.5\mu m$ penetrate deep into the lungs

D. None of the above

**Answer: C**

Watch Video Solution

**78.** 1200 ml volume of air that always remains in the lungs even after the forcible expiration is called :

A. Tidal Volume

B. Residual Volume

C. Vital capacity

D. Inspiratory Volume

**Answer: B**

Watch Video Solution

**79.** Vital capacity is

A. TR + IRV

B. TV + ERV

C. RR+ ERV

D. TV+ IRV + ERV

**Answer: D**

Watch Video Solution

**80.** If concentration of $CO_2$ is more the curve of oxygen will shift towards

" " Or

Increase in body temperature makes oxygen haemoglobin dissociation curve shift to

A. Shift to left

B. Shift to right

C. Hyperbolic

D. Parabolic

**Answer: B**

Watch Video Solution

**81.** Surfactant

A. Is a protein produceb by type - II alveolar cells

B. Is exvessive in many premature infacts resulting in difficulties in breathing

C. Decrese the surface tension of the fluid lining the alveoli

D. Is lacking in individuals suffering from acute respiratory stress syndrome

**Answer: C**

Watch Video Solution

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

A. Vital capacity

B. Functional residula capacity

C. forced expiratory volume

D. Anatomic dead space

**Answer: D**

Watch Video Solution

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

A. Fish and frog

B. Frogs and earthworm

C. Leech and earthworn

D. Fish and earthworm

**Answer: C**

Watch Video Solution

**84.** The blood-brain barrier

A. Consists of both anatomical and physiological factors

B. Regulates to some extent the passage of substance from the blood to the intersitial fluid of the brain

C. Is anatomically related to the formaiton of tight junctions between adjacent capillary endothelial cells

D. All of the above are correct

**Answer: D**

 Watch Video Solution

**85.** When fats are respiratory substrate the value of R.Q would be

A. Approx 0.7

B. Approx . 1.0

C. More than 1.0

D. None of these

**Answer: A**

Watch Video Solution

**86.** The amount of $O_2$ transported in a dissolved state through plasma is approximately

A. 0.97

B. 20-25%

C. 0.07

D. 0.03

**Answer:**

Watch Video Solution

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

A. Pulmonary ventillaiton

B. Alveolar diffusion of $O_2$ and $CO_2$

C. Transport of gased by blood

D. Utilization of $CO_2$ by cells for catabolic reactions

**Answer:**

Watch Video Solution

**88.** the enzyme essential for the transport for the transport of $CO_2$ as dicarbonate in blood is

A. Carbonxypeptidase

B. Succinic dehydrogenase

C. Carbonic anhydrase

D. Thrombokinase

**Answer: C**

Watch Video Solution

**89.** The inspiratory reserve volume + tidal volume + expiratory reserve volume is the same as

A. Inspiratory capacity + expiratory capacity

B. Total lung capacity - Functional residual volume .

C. Inspiratory capacity + Functional residual volume

D. Inspiratory capacity + Residual volume

**Answer: A**

Watch Video Solution

**90.** Between breaths, the intrapleural pressure is approximately ..... Mm Hg less than atmospheric pressure.

A. 1

B. 4

C. 8

D. 10

**Answer: D**

 Watch Video Solution

**91.** Approximately seventy percent of carbon dioxide absorbed by the blood will be transported to the lungs

A. By binding to RBCs

B. As carbaminohaemoglobin

C. As bicarbonate ions

D. In the form of dissolve has molecules

**Answer: C**

Watch Video Solution

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

A. Failling $O_2$ conectration

B. Rising $CO_2$ concentration

C. Falling $CO_2$ conecntration

D. Rising $CO_2$ and falling $O_2$ concentration

**Answer: B**


**93.** The flight muscles in an eagle has more of aerobic muscles. These muscles are also called "red muscles" because they are rich in

A. Haemoglobin

B. Saracoplasmic reticulum

C. Myoglobin

D. Globulin

**Answer: C**

Watch Video Solution

**94.** The volume of air that will remain in the lungs after a normal expiration is called

A. Vital capacity

B. Functional residula capacity

C. Residual Volume

D. Total lung Capacity

**Answer: B**

Watch Video Solution

**95.** The entry of food into the larynx is prevented by :

A. Mitral value

B. Diapragm

C. Epiglottis

D. Hyoid

**Answer: C**

Watch Video Solution

**96.** The partial pressure of oxygen in the alveoli of the lungs is

A. Less than that of carbon dioxide

B. Equal to that is the blood

C. More than that in the blood

D. Less than that in the blood

**Answer: C**

Watch Video Solution

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

A. Pressure I the lungs in higher than the atmospheric pressure

B. There is negative pressure insdie the lungs

C. There is a negative intrapleural pressure pulling at the lung walls

D. There is a positive intrapleural pressure

**Answer: C**

Watch Video Solution

**98.** Name the chronic respiratory disorder caused mainly by cigarette smoking

A. Respiratory alkalosis

B. Emphysema

C. Asthma

D. Respiratory acidosis

**Answer: B**

Watch Video Solution

**99.** Reduction in pH of blood will

A. Release bicarbonate ions by liver

B. Reduce the rate of heart beat

C. Reduce the blood supply to brain

D. Decrease affinity of haemoglobin with oxygen

**Answer: D**

 Watch Video Solution

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

A. Residual volume

B. Inspiratory volume

C. Tidal volume

D. Expiratory volume

**Answer: A**

Watch Video Solution

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

A. Increased respiratory surface , Inflammation of bronchioles

B. Increased number of bronchioles Increased respiratory surface

C. Inflammation of bronchioles , Decreased respiratory surface

D. Decreased respiratory surface , Inflammation of bronchioles

**Answer: C**

Watch Video Solution

**102.** Which of the following is an occupational respiratory disorder?

A. Botulism

B. silicosis

C. Anthracis

D. Emphysema

**Answer: B**

Watch Video Solution

# Competition File Cbse Pmt Main Examination Questions

**1.** Bulk of carbon dioxide $(CO_2)$ released from body tissues into the blood is present as

A. 70% carbominoharmoglobin and 30% as bicarbonate

B. Carbonminohaemoglobin in RBCs

C. Bicarbonate in blood plasma and RBCs.

D. Free $CO_2$ in blood plasma

**Answer: C**

 Watch Video Solution

**2.** Which one of the following is a possibility for most of us in regards to breathing, by making a conscious effort

A. One can consicously breathe in and breathe out by moving the diaphragm alone , without moving the ribs at all

B. The lungs can be made fully empty by forecally breating out all air from them

C. One can breathe out air totally without oxygen

D. One can breathe out air through eustachina tubes by closing both nose and mouth.

**Answer: A**

Watch Video Solution

**3.** For its activity , enzyme carbonic anhydrase requires :

A. Zinc

B. Iron

C. Niacin

D. Copper

**Answer: A**

 Watch Video Solution

## Competition File Assertion Type Quesitons

**1.** Assertion : Oxygen dissociation curve of haemoglobin is sigmoid .

Reason : Oxygen dissociation curve moves towards left side with increse in $CO_2$ concentration in the air.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

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

C. If Assertion is true but Reason is false .

D. If both assertion and Reason are false .

**Answer: C**

 Watch Video Solution

**2.** Assertion : — Carbonic acid is more formed inside the RBC's than the plasma.

Reason : — An enzyme carbonic anhydrase is present inside the RBC's

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: A**

Watch Video Solution

**3.** Assertion : At the lung alveoli level , blood releases carbon dioxide.

Reason : Oxy Hb formed at the lung alveoli level acts as a weak acid which favours release of $CO_2$ .

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: C**

 Watch Video Solution

**4.** Assertion : Male has deeper pitch of sound than female .

Reason : At puberty , size of larynx and vocal cords increase in male .

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

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

of Assertion .

C. If Assertion is true but Reason is false .

D. If both assertion and Reason are false .

**Answer: A**

Watch Video Solution

**5.** Assertion : Chloride shift is exchange of $Cl^-$ of plasma and $HCO_3^-$ of RBCs.

Reason Chloride shift, maintains an acid base balance between the RBC's and plasma.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: B**

 Watch Video Solution

**6.** Assertion : Aerobic respiration is bio-energetically more efficient than anaerobic respiration.

Reason : Aerobic respiration takes place in mitochondria, whereas anaerobic respiraiton occurs in cytoplasm.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: B**

 Watch Video Solution

**7.** Assertion . All terrestrial vertebrates are air - breathers.

Reason . They have developed lungs for air breathing an adaptation for land life.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: B**

Watch Video Solution

**8.** Assertion (A) : Severe Acute Respiratory Syndrome (SARS) originated in China.

Reason $(R)$: China is the most populated country of the world.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: B**

 Watch Video Solution

**9.** Assertion : Haemoglobin is an oxygen carrier.

Reason : Oxygen binds as $O_2$ to $Fe$ of haemoglobin.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct

explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: C**

Watch Video Solution

**10.** Assertion. Many visitors to the hills suffer from skin and respiratory allergy problems.

Reason. Conifers trees produce a large quantity of wind-borne pollen grains.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: A**

 Watch Video Solution

**11.** Assertion : Completion of one molecule yields 28 molecules of ATP .

Reason : Incomplete oxidation of glucose in muscle cells during active exercise leads to a build up of ethyl alcohol.

A. If both Assertion and Reason are true and Reason is a correct explaintion of Assertion .

B. If both assertion and Reason are ture Reason are ture Reason is not a correct explanation of Assertion .

C. If Assertion is ture but Reason is false .

D. If both assertion and Reason are false .

**Answer: D**

Watch Video Solution

**Competition File Additional Multiple Choice Questions**

**1.** Severe Acute Respiratory Syndrome (SARS)

A. Caused by a variant of Pneumococcus pneumoniae

B. An acute form of asthma

C. Caused by a variant of corona virus

D. Affect non - vegetarians faster

**Answer: C**

Watch Video Solution

**2.** Blood analysis of a patient reveals an unusually high quantity of carboxyhemoglobin content. Which of the following conclusion is the most likely to be correct? The patient has been inhaling poliuted air containing unusually high content of

A. Carbon dioxide

B. Carbon monoxide

C. Carbon disulphide

D. Chloroform

**Answer: B**

Watch Video Solution

**3.** When $CO_2$ concentration in blood increases breathing becomes

A. slow and deep

B. Faster and deeper

C. Shallower and slow

D. No affect on breathing

**Answer: B**

Watch Video Solution

**4.** Dough kept overnight in warm weather becomes soft and spongy due to

A. Cohesion

B. Osomosis

C. Absorption of $CO_2$ from atmosphere

D. Fermentation

**Answer: D**

Watch Video Solution

**5.** In glycolysis, during oxidation, electrons are removed by

A. $NAD^+$

B. Molecular oxygen

C. ATP

D. Glyceraldehyde -3-phosphate

**Answer: A**

Watch Video Solution

**6.** what is true for $CO_2$ concentration ?

A. More in alveolar air than in expired air

B. More in expired air than in alveolar air

C. More in expired air than in alveolar air

D. More in alveolar air than in inspired air

**Answer: A**

Watch Video Solution

**7.** Respiration is controlled by :

A. Medulla oblongata

B. Cerebellum

C. Hypothalamus

D. Cerebrum

**Answer: A**

Watch Video Solution

**8.** R.Q. for fatty substance/fat is

A. Move than one

B. One

C. Less than one

D. Infinite

**Answer: C**

Watch Video Solution

**9.** Which does not affect oxy - haemoglobin curve:

A. High $O_2$ and low $CO_2$

B. High body temperature

C. High body $O_2$ and high Hb

D. High pH

**Answer: D**

Watch Video Solution

**10.** One molecule of haemoglobin carries molecules of oxgyen :

A. One

B. Two

C. Three

D. Four

**Answer: D**

Watch Video Solution

**11.** SARS is caused by the variant of

A. Penumococcus pneumoniae

B. Common cold Cornon virus

C. Asthma

D. Bronhcithis

**Answer: B**

 Watch Video Solution

**12.** 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

**13.** During inspiration , the diaphragm:

A. Reflexes to becomes

B. Contracts and flattens

C. Expands

D. Shows on change

**Answer: B**

Watch Video Solution

**14.** Ravi, who lived at sea level, had around 5 million RBC per cubic millimeter of his blood. Later when he lived at an altitude of 18,000 ft, showed around 8 million RBC per cubic millimeter of blood. This is an adaptation because

A. He had pollution free air to breathe

B. At high altitude , he ate more nutritive food

C. At high altitude , $O_2$ level is less hence more RBCs were required to take more oxygen

D. At high altitude , there is more UV radittion which enhances RBCs production.

**Answer: C**

Watch Video Solution

**15.** what is true about haemoglobin

A. It is a dipeptide and present in RBCs in blood worm

B. Present in dissolved state in blood plasma in earthworm

C. It is a dipeptde in mammals and present in RBCs

D. Presetn in dissolved state in blood plasma in scorpion

**Answer: B**

Watch Video Solution

**16.** Respiration result in :

A. Release of $O_2$

B. Anabolism

C. Transfer of $CO_2$

D. Release of $CO_2$

**Answer: D**

Watch Video Solution

**17.** After deep inspiration, capacity of maximum expiration of lung is called : —

A. Vital capacity

B. Total lung capacity

C. Inspiratory capacity

D. Functional reisdual capacity

**Answer: A**

Watch Video Solution

**18.** Respiratory quotient is defined as :

A. $\frac{\text{Volume of } CO_2 \text{ formed}}{\text{Volume of } CO_2 \text{ used}}$

B. $\frac{\text{Volume of } CO_2 \text{ formed}}{\text{Volume of } O_2 \text{ used}}$

C. $\frac{\text{Volume of } O_2 \text{ formed}}{\text{Accumulation of blood in brain}}$

D. $\frac{\text{Volume of } O_2 \text{ formed}}{\text{Volume of } N_2 \text{ Used}}$

**Answer: B**

Watch Video Solution

**19.** Respiratory quotient is defined as :

A. More $O_2$ concentration in blood

B. More $CO_2$ concentration in blood

C. Accumulation of blood in brain

D. All of these

**Answer: B**

Watch Video Solution

**20.** After taking a long deep breath we do not respire for some seconds due to

A. More $O_2$ in blood

B. More $O_2$ in blood

C. Low $CO_2$ in blood

D. Less $O_2$ in blood

**Answer: C**

Watch Video Solution

**21.** Lungs are covered by

A. Pleural membrance

B. Peritoneum

C. Pericardium

D. None of these

**Answer: A**

 Watch Video Solution

**22.** Maximum amount of oxygen is lost from the blood in the

A. Capillaries surrouding the tissure cells

B. Arteries of body

C. Left auricle of the heart

D. Capillaries surrouding the alveoli

**Answer: A**

Watch Video Solution

**23.** A person whith normal tidal volume has a respirtory rate of 14 breaths per mintue. What will be the total tidal respiratory volume per mintue ?

A. 3800 ml/mt

B. 7000 ml/mt

C. 14000 ml/mt

D. 1300 ml/mt

**Answer: B**

 Watch Video Solution

**24.** How much per cent of $CO_2$ is expired ?

A. 0.07

B. 0.32

C. 0.25

D. 0.2

**Answer: B**

View Text Solution

**25.** Pulmonary ventilation movements are due to :

A. Costal muscles

B. Diaphragm

C. Wall of lungs

D. Costal muscles and diaphragm

**Answer: D**

Watch Video Solution

**26.** If R. Q. is less than 1.0 in a respiratory metabolism it would mean that

A. Carbonohydrates are used as respiratory substrate

B. Organic acids are used as respiratory substrate

C. Oxidation of respiratory substrate consumed less $O_2$ than $CO_2$ relased .

D. Reaction is anaerobic

**Answer:**

Watch Video Solution

**27.** Partial pressure of oxygen in the lungs is .

A. 100 mm Hg

B. 110 mm Hg

C. 40 mm Hg

D. 60 mm Hg

**Answer: A**

Watch Video Solution

**28.** In Lungs there if definity exchange of ions between RBC and Plasma. Removal of $CO_2$ from blood involves -

A. Efflux of $Cl^-$ ions into RBC

B. Influx of $Cl^-$ ions into RBC

C. Influx of $HCO_3^-$

D. Efflux of $HCO_3$ ions into RBC

**Answer: A**

Watch Video Solution

**29.** Ascent of high mountains may cause altitude sickness in men. Prime cause of this is

A. Excess of $CO_2$ in blood

B. Decreased efficiency of haemoglobin

C. Decreaed partial pressure of oxygen

D. Decreaed proportion of oxygen in air

**Answer: C**

Watch Video Solution

**30.** which of the following conditions is responsible for increase in ventilation rate of lungs ?

A. Decrease in $O_2$ content of inhaled air

B. Decrease in $O_2$ content of exhaled air

C. Increase of $CO_2$ content in exhaled air

D.

**Answer: C**

Watch Video Solution

## Chapter Practice Test

**1.** What is significance of respiration ?

Watch Video Solution

**2.** State one difference between conducting part and respiratory part of respiratory system .

Watch Video Solution

**3.** Define pleura.

Watch Video Solution

**4.** What is oxygen dissociation curve ?Give its shape .

Watch Video Solution

**5.** Define Haldane effect .

Watch Video Solution

**6.** Enlist the characteristics of respiratory surface .

Watch Video Solution

**7.** Name the inspiratory muscles . How they play role in inspiration ?

Watch Video Solution

**8.** What is oxygenation of blood ? Which factors favour the oxygenation ?

Watch Video Solution

**9.** Enlist respiratory organs found in different animals groups.

Watch Video Solution

**10.** Write a note on Bohr's effects.

Watch Video Solution

**11.** Define the following :

(i) Inspiratory Reserve Volume (ii) Residual Volume (iii) Vital capacity.

Watch Video Solution

**12.** What is bronchial intercom ? Give its significance .

Watch Video Solution

**13.** Write a note on neural regulation of respiration .

Watch Video Solution

**14.** How is nasal respiration is more advantageous than mouth respiration ?

Watch Video Solution