BIOLOGY

BOOKS - MBD

Breathing and Exchange of Gases

Example

1. Name the catabolic process meant for release of energy.

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2. Which high energy molecule is formed during oxidation of food substances?

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3. Name the common respiratary organs of higher aquatic animals.

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4. What is the principle of exchange of gases?

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5. What is breathing?

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6. What is the breathing rate in human?

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7. Anaerobic respiration occurs in the presence of free molecular oxygen(true or False)

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8. Name the respirating organs of Butterfly

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9. Name the respiratory organs of tadpole larva of frog

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10. Respiration by gills is called..... respiration.

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11. What is special about lungs of birds?

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12. The lungs are covered by .....membrane. (fill up)

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13. Gas exchange continues in the lungs even after forceful expiration.(True or False)

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14. Name the protective sac which surrounds the lungs.

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15. What is the function of pleural fluid?

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16. Name the respiratory surface of human lungs.

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17. Write any two characteristics of respiratory surface.

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18. What are nostrils.

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19. How many lobes are present in right and left lung.

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20. How many alveoli are present in lungs?

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21. Write the other name of sound box

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22. Where are lungs situated?

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

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24. Give the percentages of O_2 in atmospheric air and alveolar air.

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25. Give the partial pressure of O_2 in atmospheric air and alveolar air.

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26. What is pulmonary gas exchange?

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27. State the P_{O_2} and P_{CO_2} in the blood after the pulmonary gas exchange.

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28. Name the factors which favour the dissociation of oxy-Hb at the body cells.

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29. What do youmean by loading of oxygen in blood?

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30. State the P_{O_2} and P_{CO_2} in the blood after respiration.

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31. Name two forms by which O_2 is transported by blood from the lungs to body tissues.

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32. What is the location of inspiratary and expiratory centres?

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33. Name two respiratory disorders.

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34. Name any two occupational respiratory disorders.

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35. How much percentage of CO_2 is transported as bicarbonates by blood?

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36. Fill in the blank:

Diaphragm contracts to help in .....while the contraction of abdominal muscles help in .....

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37. Fill in the blank:

Vital capacity of trained athletes is .....than

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

38. Fill in the blank:

Leeches respire through .....while prawn respire through.....

39. Fill in the blank:

Alveolar pO2 is .....than the venous pO2 while arterial pO2 is .....than the alveolar pO2.

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40. Fill in the blank:

The volume of air left in the lungs after a maximum expiration is called .....while the

volume of air breathed out during a normal restful respiration is called .....

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41. True or False:

Fishes respire through their skin.

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42. True or False:

Aerobic respiration produces lactic acid at the

end.

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43. True or False:

Gas exchange continues uninterrupted in the lungs even during expiration.

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44. True or False:

A person can expel all air from the lungs by

forceful expiration.

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45. True or False:

Expiration is normally brought about by the relaxation of inspiratory muscles.

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46. True or False:

Vital capacity represent the maximum capacity

to ventile the lungs.

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47. Give the technical terms used for the following:

It is simply inhaling fresh air rich in oxygen and exhaling foul air rich in carbon dioxide.

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48. Give the technical terms used for the following:

Small air sacs of the lung through the walls of which gaseous exchange takes place between blood and air.

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49. Give the technical terms used for the following:

Respiratory air tubes of insects

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50. Give the technical terms used for the following:

Two layered sac surrounding lung.

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51. Give the technical terms used for the following:

A sheet of muscular tissue separating thorax from abdomen, aids in breathing.

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52. Define vital capacity. What is its significance?

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

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54. Diffusion of gases occurs in the alveolar region only and not in the other parts of respiratory system. Why?

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55. What are the major transport mechanisms for CO_2? Explain.

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56. What will be the P_{O_2} and P_{CO_2} in the expired air compared to those in the alveolar air?

A. 1. P_{O_2} lesser, P_{CO_2} higher

B. 2. P_{O_2} higher, P_{CO_2} lesser

C. 3. P_{O_2} higher P_{CO_2} higher

D. 4. P_{O_2} lesser, P_{CO_2} lesser

Answer:

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57. Explain the process of inspiration under normal conditions.

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58. How is respiration regulated?

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59. What is the effect of pCO_2 on oxygen transport?

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

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61. What is the respiratory mechanism in an insect?

Watch Video Solution

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

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

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64. Distinguish between: IRV and ERV

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65. Distinguish between: Inspiratory capacity and Expiratory capacity.

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66. Distinguish between: Vital capacity and Total lung capacity.

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67. What isTidal volume? Find out theTidal volume (approximate value) for a healthy human in an hour.

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68. Define the following terms

Tidal volume

Watch Video Solution

69. Define the following terms?

Residual volume

Watch Video Solution

70. Define the following terms?

Asthma

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

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72. Cigarette smoking causes emphysema. Give reason.

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

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

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75. Arrange trhe following terms based on their volumes in an ascending order

Tidal Volume (TV)

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76. Arrange trhe following terms based on their volumes in an ascending order

Residual Volume (RV)

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77. Arrange trhe following terms based on their volumes in an ascending order

Inspiratory Reserve Volume (IRV)

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78. Arrange the following terms based on their volumes in an ascending order

Expiratory Capacity (EC)

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79. Complete the missing term:

inspiratory capacity IC = ...+ IRV

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80. Complete the missing terms:

.....= TV + ERV

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81. Complete the missing terms:

Functional Residual Capacity (FRC) = ERV + ...

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82. Name the organs of respiration in the following organisms:

Flatworm- .....

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83. Name the organs of respiration in the following organisms:

Birds -.....

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84. Name the organs of respiration in the following organisms:

Frog - .....

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85. Name the organs of respiration in the following organisms:

Cockroach - .....

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

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87. State the different mode of CO_2 transport in blood.

Watch Video Solution

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

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89. For completion of respiration process, write the given steps in sequential manner.

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90. Differentiate between:

Inspiratory and expiratory reserve volume

Watch Video Solution

91. Distinguish between: Vital capacity and Total lung capacity.

Watch Video Solution

92. Differentiate between:

Emphysema and occupational respiratory disorder.

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93. Explain the transport of O_2 and CO_2 between alveoli and tissue with diagram.

Watch Video Solution

94. Explain the mechanism of breathing with neat labelled sketches.

Watch Video Solution

95. Explain the role of neural system in regulation of respiration.

Watch Video Solution

96. How is oxygen transported in the blood od earthworm from skin to body parts?

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97. Define larynx.

Watch Video Solution

98. Name the space between two pleural membranes and the fluid present.

Watch Video Solution

99. What is the result of down and upward movement of diaphragm?

Watch Video Solution

100. How is increase or decrease in diameter chest cavity caused?

Watch Video Solution

101. Name the respiratory pigments present in blood.

Watch Video Solution

102. Write the chemical reaction catalysed by zinc-enzyme carbonic anhydrase.

Watch Video Solution

103. Where are choanae located?

Watch Video Solution

104. Name the cavities separated by palate.

Watch Video Solution

105. Name the respiratory organs of insects, leeches crustaceans and fish.

Watch Video Solution

106. What is the vital capacity of lungs in a normal adult person.

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107. Name the organ which produce sound.

Watch Video Solution

108. How much oxygen is transported by haemoglobin during exercise?

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109. What is the shape of oxygen dissociation curve?

Watch Video Solution

110. Name the factors on which oxygen dissociation curve depends.

Watch Video Solution

111. What is the main factor that determines the saturation of haemoglobin with oxygen?

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112. Name three respiratory disorders?

Watch Video Solution

113. Name the causative organism of pneumonia.

Watch Video Solution

114. What is respiration ? Define aerobic respiration and anaerobic respiration.

Watch Video Solution

115. Differentiate external respiration and internal respiration.

Watch Video Solution

116. What are three steps of internal respiration?

Watch Video Solution

117. How does respiration fulfil the energy requirements of an organism?

Watch Video Solution

118. List the steps involved in respiration.

Watch Video Solution

119. Differentaite :

Aerobic respiratin and anaerobic respiration

Watch Video Solution

120. What are the characteristics of respiratory surface efficient for gaseous exchange?

Watch Video Solution

121. Point out three important differences between aquatic and terrestrial respiration.

Watch Video Solution

122. RBC lacks mitochondria, how do they carry out respiration?

Watch Video Solution

123. How is respiration carried out in simple lower animals?

Watch Video Solution

124. How is respiration carried out in the earthworm?

Watch Video Solution

125. What is the advantage of negative rather than positive pressure breathing?

Watch Video Solution

126. Name the two main components of respiratory system of man. What is the respiratory tract in man?

Watch Video Solution

127. Write short note on pleura.

Watch Video Solution

128. Draw a well-labelled diagram showing trachea, bronchi, bronchioles and alveoli.

Watch Video Solution

129. Write a paragraph on thoracic cavity.

Watch Video Solution

130. Write a short note on human lungs.

Watch Video Solution

131. Differentiate right lung and left lung.

Watch Video Solution

132. Draw diagram to show the difference between right lung and left lung.

Watch Video Solution

133. How do human lungs communicable to this exterior.

Watch Video Solution

134. How do exchanges of gases take place in the lungs.

Watch Video Solution

135. What are the advantages of breathing through nose?

Watch Video Solution

136. Differentiate inspiratory and expiratory muscles.

Watch Video Solution

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

Watch Video Solution

138. Write a note on transport of oxygen.

Watch Video Solution

139. How is carbon dioxide taken up from tissues and transported to lungs?

Watch Video Solution

140. What do you understand by artifical respiration? When and why is it used?

Watch Video Solution

141. Differentiate carbomino haemoglobin and oxyhaemoglobin.

Watch Video Solution

142. Differentiate alveolar air and inspired air.

Watch Video Solution

143. Give the average values of the following in normal adult humans:

Residual volume

Watch Video Solution

144. Give the average values of the following in normal adult humans:

Arterial P_{O_2}

Watch Video Solution

145. Give the average values of the following in normal adult humans:

Tidal volume

Watch Video Solution

146. Give the average values of the following in normal adult humans:

Alveolar air

Watch Video Solution

147. Give the average values of the following in normal adult humans:

Rate of resting

Watch Video Solution

148. Give the average values of the following in normal adult humans:

Arterial P_{O_2}

Watch Video Solution

149. Give the average values of the following in normal adult humans:

Vital capacity

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150. Give the average values of the following in normal adult humans:

Venous P_{O_2}

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151. What is utility of measuring various respiratory volume?

Watch Video Solution

152. What is the rate of breathing healthy human?

Watch Video Solution

153. How much air can be inspired or expired by healthy man, per minute?

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154. What is chloride shift? Write its significance during respiration.

Watch Video Solution

155. What is the role of carbonic anhydrase.

Watch Video Solution

156. Write a short note on larynx.

Watch Video Solution

157. Define the following :

Haldane effect

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158. Define the following :

Respiratory quotient

Watch Video Solution

159. Define the following :

Histotoxic hypoxia

Watch Video Solution

160. Define the following :

Hyperpnoea

Watch Video Solution

161. Define the following :

Apnoea

Watch Video Solution

162. Define the following :

Hypoxia

Watch Video Solution

163. Define the following :

Dyspnoea and Eupnoea.

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164. Write short notes on:

Pneumnia

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165. Write short notes on:

Bronchitis.

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166. What is the cause of coughing?

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167. How do arthropods ensure a fresh supply of air in the tracheal system all the times?

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168. Describe respiratory passage.

Watch Video Solution

169. What is the respiratory tract in man? Write short note on nasal cavity.

Watch Video Solution

170. Ilustrate structure of larynx with the help of figure only.

Watch Video Solution

171. With the help of a labelled diagram describe the structure of lungs.

Watch Video Solution

172. Give an account of histology of human lungs.

Watch Video Solution

173. Explain oxygen dissociation curve.

Watch Video Solution

174. Discuss factors which affect oxygen dissociation curve?

Watch Video Solution

175. Discuss Transport of Carbon dioxide.

Watch Video Solution

176. Describe regulation of respiration in human.

Watch Video Solution

177. Explain why:

Oxygen leaves the blood from tissue capillaries, but carbon dioxide enters the blood in tissue capillaries.

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178. Explain why:

Erythrocytes can carry out anaerobic metabolism only.

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179. Explain why:

Gaseous exchange continue in the lungs without interrpution even during expiration.

Watch Video Solution

180. Explain why:

Contraction of inspiratory muscles causes inspiration while their relaxation causes expiration.

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181. Explain why:

Oxygen enters the blood from the alveolar air but carbon dioxide leaves the blood to enter the alveolar air.

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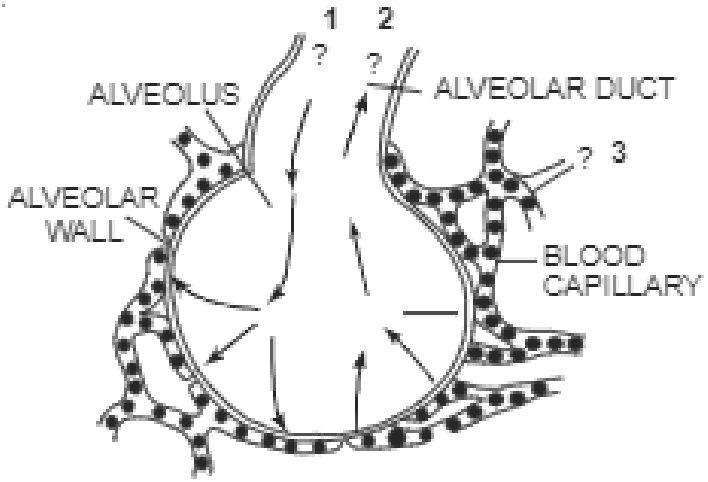
182. Study the figure and answer :

Name the gases 1 and 2.



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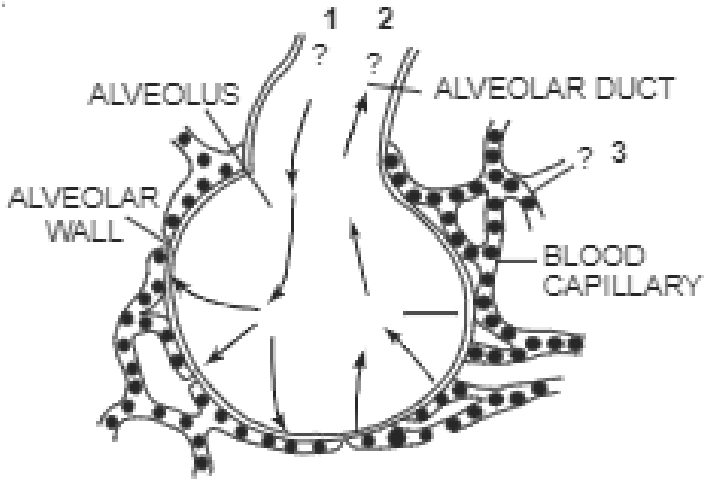
183. Study the figure and answer :

What is label 3 ? Write its function.



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184. Give reason for the following:

Far more O_2 is released from oxy Hb in a more active tissue than in a less active tissue.

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185. oxygenation of blood promotes the release of CO_2 from the blood in the lungs.

Watch Video Solution

186. Give reason for the following:

Contraction of inspiratory muscles causes inspiration while their relaxation causes expiration.

Watch Video Solution

187. Give reason for the following:

Nasal respiration is advantageous than mouth respiration.

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Exercise

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

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2. Cigarette smoking causes emphysema. Give reason.

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

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4. Complete the missing term:

inspiratory capacity IC = ...+ IRV

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5. How many alveoli are present in lungs?

Watch Video Solution

6. Differentiate inspiratory and expiratory reserve volume.

Watch Video Solution

7. Write characteristics of efficient respiratory surface.

Watch Video Solution

8. RBC lacks mitochondria, how do they carry out respiration?

Watch Video Solution

9. How do exchanges of gases take place in the lungs.

Watch Video Solution

10. Describe transport of CO_2 in the body.

Watch Video Solution

11. Differentiate aerobic and anaerobic respiration.

Watch Video Solution

12. Explain the following:

Chloride shift

Watch Video Solution

13. Define the following :

Haldane effect

Watch Video Solution

14. Explain the following:

Pneumonia.

Watch Video Solution

15. Write a note on dissociation curve.

Watch Video Solution

16. Explain the mechanism of breathing in human

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