

Respiratory System

1. Define respiration?

Ans: Respiration is the process of releasing energy by breaking down food needed for the various activities of the body. This breakdown occurs by utilizing oxygen which we breathe along with air.

There are two types of respiration occurring in organisms:

- Aerobic Respiration: Oxygen is needed for the process.
- Anaerobic Respiration: Oxygen is not needed for the process.

2. Name the parts of the human respiratory system?

Ans: The human respiratory system includes the following structure:

- Nose
- Pharynx
- Larynx
- Trachea
- Bronchi
- Lungs

3. Briefly explain the process of “Gaseous Exchange” occurring in lungs?

Ans: The air which reaches the alveoli through respiratory passages is rich in oxygen. So diffusion of gases occurs through the blood capillaries surrounding the air sacs. The oxygen from the lungs diffuse into the blood and is picked

up by haemoglobin in red blood cells. Carbon dioxide from the blood diffuses into the lungs and is exhaled out through the same passage. This concludes the process of gaseous exchange in lungs.

4. State the three phases of respiration?

Ans: The three phases of respiration are as follows:

- **Breathing:** The physical process of inhalation and exhalation.
- **Gaseous transport:** It involves the transport of oxygen from the lungs to the organs and carbon dioxide from the organs to the lungs.
- **Cellular respiration:** The process of oxidation of glucose inside the cell with the release of energy along with carbon dioxide and water.

5. Differentiate between Inhalation and Exhalation?

Ans: The difference between Inhalation and Exhalation are as follows:

Inhalation(Inspiration)	Exhalation(Expiration)
<ul style="list-style-type: none">• Ribs move upwards and outwards• Diaphragm is pushed downwards and flattens• Volume of the chest cavity increases.• Lungs expand , air pressure become low.	<ul style="list-style-type: none">• Ribs move downwards and inwards.• Diaphragm moves upwards and becomes dome shaped• Volume of the chest cavity decreases• Size of the lungs reduces,

<ul style="list-style-type: none"> • Atmospheric air at a higher pressure rushes into the lungs. 	<p>air pressure becomes higher.</p> <ul style="list-style-type: none"> • Air rushes out of the lungs as atmospheric air pressure is lower.
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6. Differentiate between breathing and respiration?

Ans: The difference between breathing and respiration is as follows:

Breathing	Respiration
<ul style="list-style-type: none"> • It is a physical process • Air contained oxygen is taken in to the lungs and air loaded out with carbon dioxide is given out. • Lungs are mainly involved. 	<ul style="list-style-type: none"> • It is a biochemical process. • Oxygen taken in used in oxidizing glucose and energy is released. • Occurs in all living cells of the body

7. Give reasons for the following:

a. Inner wall of the nose is covered with a sticky fluid and hair?

Ans: The sticky fluid called mucous and the hair helps trap unwanted foreign particles such as germs and dust from getting inside the lungs.

b. Ciliated epithelium is found on the inner walls of the trachea, bronchi and bronchioles.

Ans: The continuous movement of the cilia helps push out any unwanted particles that may have entered into the respiratory system along with the inhaled air.

c. C shaped rings of cartilage is found on the walls of trachea.

Ans: The cartilage rings found on the walls of trachea helps strengthen it and prevents it from collapsing on itself.

d. Alveoli have thin walls are richly supplied with blood capillaries.

Ans: The thin walls and rich supply of blood vessels help facilitate the exchange of gases occurring through it.

e. We sneeze when a foreign particle enters our nasal chamber.

Ans: When any foreign particles enter the nasal chamber, the sensitive mucous membrane gets irritated. This results in sneezing, an involuntary action by which the irritant is removed.

8. Write briefly about any viral Respiratory disease you know? Also state the methods used for treating it?

Ans: Bronchi is a respiratory disease caused by virus. It causes the lining of the bronchi to be inflamed causing it to swell and consecutive narrowing of the bronchial passage.

This results in breathlessness and coughing spells.

Drinking plenty of fluids, following a well balanced diet, frequent hand washing and adequate rest can prevent and improve bronchitis.

9. Name any two respiratory disease caused by a bacterium?

Also state their treatment methods.

Ans: Any two respiratory diseases caused by bacteria are
Pneumonia and Tuberculosis.

Pneumonia is treated with antibiotics (mainly penicillin) and
tuberculosis is treated by BCG vaccine or
Antibiotics(mainly streptomycin).