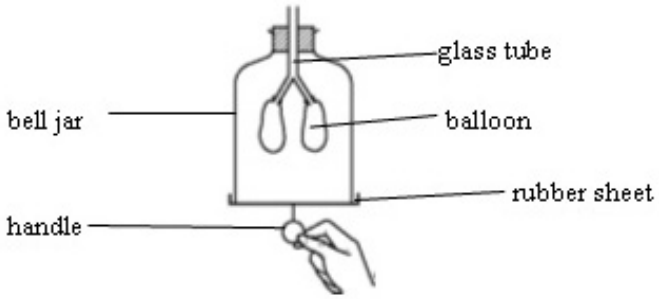
Chapter 18 Respiration

Paper 1
Answer **all** *questions. Each question is followed by four options,* **A**, **B**, **C** *and* **D**. *For each question, choose* **one** *answer only.*

1.



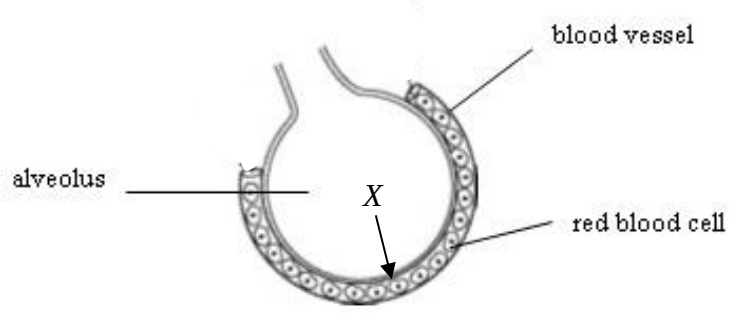
The figure above shows a model of the human respiratory system. Which of the following statements is **true** when the rubber sheet is pulled downwards?

A Pressure in the bell jar decreases.
B Both balloons contract.
C Air is forced out from the balloons.
D Both balloons expand until they burst.

2. Which of the following organs is involved in the respiratory system?

A Pancreas
B Lungs
C Kidney
D Heart

3.

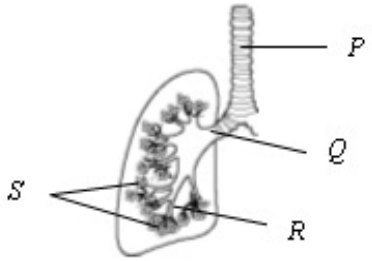


The figure above shows the alveolus and the blood vessels around it. Gas *X* will diffuse into red blood cell and combine with haemoglobin to form

A carboxyhaemoglobin
B blood plasma
C oxyhaemogblobin

D glucose

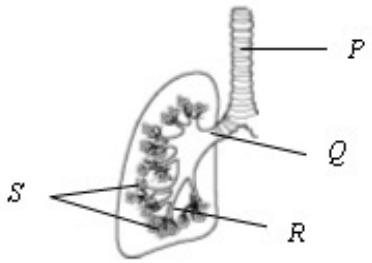
4.



The figure above shows the structure of the human respiratory system. Which of the following represents structures *P*, *Q*, *R* and *S*?

	P	*Q*	*R*	*S*
A	Bronchiole	Bronchus	Alveolus	Trachea
B	Trachea	Bronchus	Bronchiole	Alveolus
C	Bronchus	Bronchiole	Trachea	Alveolus
D	Trachea	Bronchiole	Bronchus	Alveolus

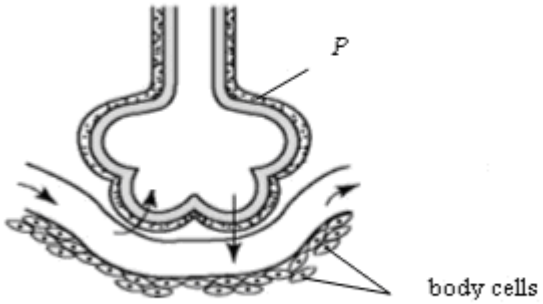
5.



The figure above shows a section of the human respiratory system. What takes place in the structure labelled *S*?

A Exchange of gases
B Secretion of enzymes
C Production of oxygen
D Production of new cells

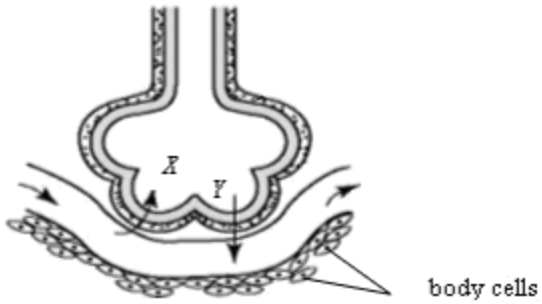
6.



The figure above shows the exchange of gases in body tissues. Which of the following is **not** a characteristic of surface *P* to help respiration?

A Moist
B Permeable
C Small surface area
D Many blood capillaries

7.



The figure above shows a part of the human respiratory system. Which of the following represents gases *X* and *Y*?

	X	*Y*
A	Oxygen	Hydrogen
B	Oxygen	Carbon dioxide
C	Hydrogen	Oxygen
D	Carbon dioxide	Oxygen

8. Which substance in found in cigarette smoke corrodes the lung cells?

A Tobacco tar
B Nicotine
C Acids
D Carcinogenic substances

9. The following diseases are caused by smoking **except**

A heart disease
B lung cancer
C bronchitis
D tuberculosis

10.

K - Bronchiole
L - Bronchus
M - Alveolus
N - Trachea

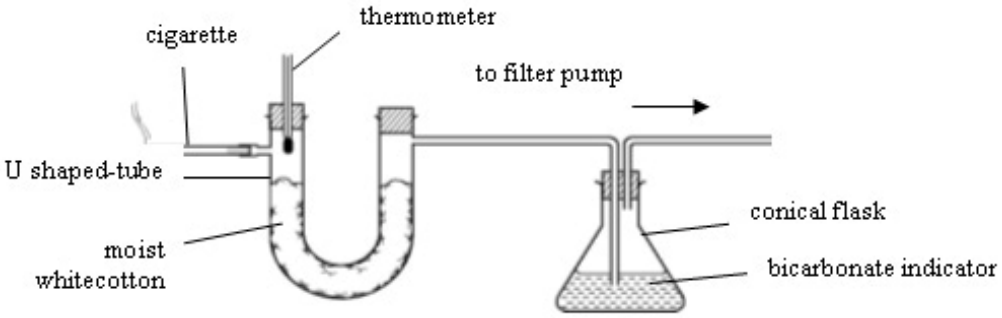
Air is exhaled out of the lungs in the sequence of

A *K*, *L*, *M*, *N*
B *N*, *M*, *K*, *L*
C *M*, *K*, *L*, *N*
D *N*, *L*, *K*, *M*

11. In the breathing mechanism, which action reduces the volume of the thoracic cavity?

A The external intercostal muscles contract.
B The internal intercostal muscles contract.
C The diaphragm muscle contracts.
D The outer rib cage moves upwards and forwards.

12.



The figure above shows an experiment to study the effects of smoking on the lungs. What can be observed at the end of the experiment?

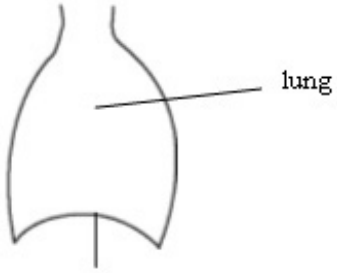
I The moist white cotton turns yellowish brown.
II The colour of the bicarbonate indicator turns from red to yellow.
III The thermometer records a rise in temperature.

A I and II only
B I and III only

C II and III only
D I, II and III

13. Which of the following happens when we exhale?
A The rib cage moves outwards
B The diaphragm becomes flat
C The air pressure in the thoracic cavity increases
D The volume of the thoracic cavity increases

14.



Diaphragm curves upwards

The figure above shows a simple model of the thoracic cavity. Which of the following occurs when the diaphragm curves upwards?
A External intercostal muscles contract.
B Air from the atmosphere is inhaled into the lungs.
C Diaphragm muscle contracts.
D Air pressure in the thoracic cavity is higher than the atmospheric pressure.

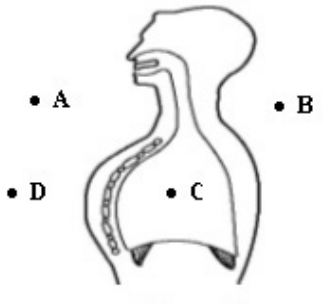
15.

- Unusual cells growth in the lungs
- Carcinogens in cigarette smoke cause the disease

Based on the information above, what is the disease of the respiratory system described?

A Lung cancer
B Asthma
C Bronchitis
D Emphysema

16.



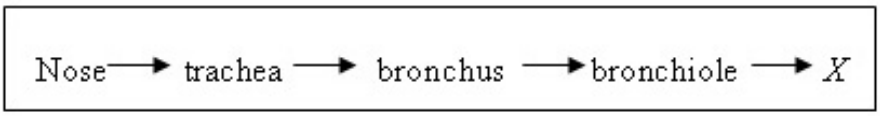
The figure above shows the inhalation mechanism of human. At which of the points, **A**, **B**, **C** or **D** is the air pressure the lowest?

17. Which of the following shows the adaptation of the alveolus for the exchange of gases in the lungs?

I The wall of the alveolus is several cells thick.
II There is a large number of alveoli.
III The wall of the alveolus is moist.

A I and II only
B I and III only
C II and III only
D I, II and III

18.



The flow chart in the figure above shows the air passage from the nose to structure *X*. What are the characteristics of structure *X*?

I Moist surface
II One-cell thick
III Surrounded by a network of blood capillaries

A I and II only
B I and III only
C II and III only
D I, II and III

19.

Substance in cigarette smoke	Adverse effect
X	Causes addiction to smoking
Y	Blackens the lungs
X	Corrodes the lung cells

The table above shows the substances in cigarette smoke and their respective adverse effects. Which of the following represents substances *X*, *Y* and *Z*?

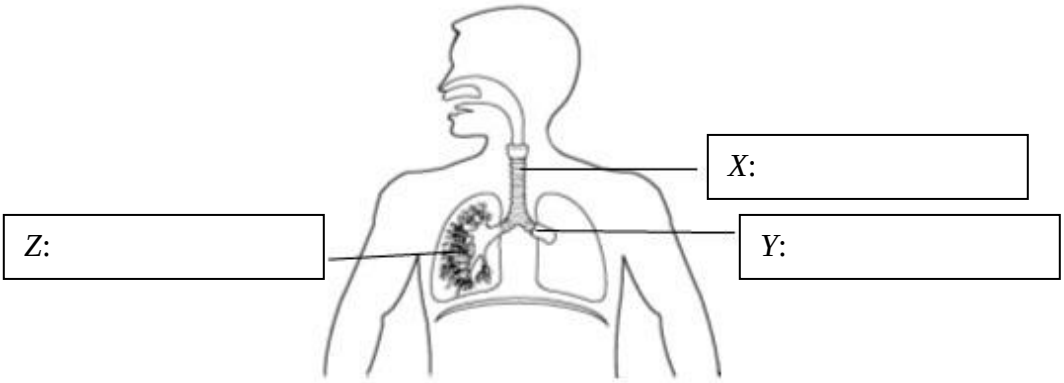
	X	*Y*	*Z*
A	Tobacco tar	Nicotine	Carcinogenic substances
B	Nicotine	Tobacco tar	Acidic gas
C	Carcinogenic substances	Acidic gas	Tobacco tar
D	Acidic gas	Carcinogenic	Nicotine

20. Which of the following occurs when the external intercostal muscles contract?

I The ribs move upwards.
II Diaphragm muscle contracts.
III Volume of the thoracic cavity decreases.

A I and II only
B I and III only
C II and IV only
D I, III and IV only

Paper 2
Answer the question.



The figure above shows one of the system in the human body.

(a) On the figure above, label organs *X*, *Y* and *Z* using the following words.

Alveolus	Trachea	Bronchus

(b) Name the system shown in the figure above.

_____

(c) Name the gas that diffuses through the alveolus into the capillaries.

_____

(d) What takes place at *Z*?

_____

(e) Complete the flow chart below to show the sequence of air movement from the nose to the alveolus.

Answers:

Paper 1

1	**A**	11	**B**
2	**B**	12	**D**
3	**C**	13	**C**
4	**B**	14	**D**
5	**A**	15	**A**
6	**C**	16	**C**
7	**D**	17	**C**
8	**C**	18	**D**
9	**D**	19	**B**
10	**C**	20	**A**

Paper 2

(a) *X*: Trachea; *Y*: Bronchus; *Z*: Alveolus
(b) Human respiratory system
(c) Oxygen
(d) Exchange of gases
(e) Trachea; Bronchus; Bronchiole