1. Which are features of a good gas exchange surface? (Select all that apply.)

   ☐ thin (short diffusion distance)

   ☐ thick and dry

   ☐ large surface area

   ☐ good blood supply

   Tick every correct option.

2. When you breathe in, the diaphragm:

   ☐ disappears

   ☐ flattens (contracts)

   ☐ makes oxygen

   ☐ domes up (relaxes)

3. Gas exchange in the lungs happens in the:

   ☐ alveoli

   ☐ ribs

   ☐ trachea

   ☐ diaphragm

4. Air rushes into the lungs when the pressure inside the chest:

   ☐ stays the same

   ☐ falls below the outside air pressure

   ☐ rises above the outside

   ☐ becomes zero

5. At the alveoli, oxygen diffuses:

   ☐ not at all

   ☐ from the air into the blood

   ☐ from the blood into the air

   ☐ in both directions equally

6. Compared with inhaled air, exhaled air has:

   ☐ more oxygen

exercises.lol exercises.com.cn

   ☐ no carbon dioxide

   ☐ less oxygen and more carbon dioxide

7. Gas exchange occurs by diffusion, which is different from breathing.

   ☐ True ☐ False

8. During inhaling, the rib muscles pull the ribs down and in.

   ☐ True ☐ False

9. A large _____ area speeds up the diffusion of gases.

   _____

10. The movement of air in and out of the lungs is called _____ (breathing).

    _____

1. **thin (short diffusion distance); large surface area; good blood supply**

   A thick, dry surface would slow diffusion.

2. **flattens (contracts)**

   The diaphragm flattens to increase chest volume.

3. **alveoli**

   Alveoli are the tiny air sacs where gases exchange.

4. **falls below the outside air pressure**

   Lower internal pressure draws air in.

5. **from the air into the blood**

   Oxygen moves down its gradient into the blood.

6. **less oxygen and more carbon dioxide**

   Oxygen is used and carbon dioxide added.

7. **True**

   Breathing ventilates; gas exchange is diffusion across the surface.

8. **False**

   False. During inhaling the external intercostal muscles lift the ribs up and out, expanding the chest and lowering the pressure inside.

9. **surface**

   More surface area means faster gas exchange.

10. **ventilation**

    Ventilation keeps the gas-exchange gradient steep.

exercises.lol exercises.com.cn