

## 13 Breathing

- 1 (a) Energy is obtained from food by a process called .....(A).....  
(b) The intake of oxygen and output of carbon dioxide at a respiratory surface is called .....(B).....  
(c) The process of renewing air in the lungs is called .....(C).....  
(d) Which of the processes A-C are included in the term 'breathing'?
- 2 Name, in the correct order, the structures that incoming air would pass through between the nasal cavity and the alveolus.
- 3 What is the function of the rings of cartilage in the respiratory passages?
- 4 Using the words 'cilia' and 'mucus', describe, very briefly, how the body gets rid of dust which enters the lungs.
- 5 Which of the following is correct:  
When we inhale
  - (a) our intercostal muscles contract and our ribs move down
  - (b) our diaphragm muscles contract and the ribs move up
  - (c) our diaphragm muscles contract and the ribs move down
  - (d) our intercostal muscles contract and the diaphragm muscles relax.
- 6 In what two ways will the composition of blood coming from the pulmonary artery differ from that going to the pulmonary vein?
- 7 The percentage of oxygen absorbed from the air in the lungs is always about the same, so how can the oxygen supply to the blood be increased during vigorous activity?
- 8 Inhaled air contains about 21 % oxygen. What is the approximate percentage concentration of oxygen in exhaled air?
- 9 Which of the terms (i) vital capacity, (ii) tidal volume, (iii) residual air, could reasonably apply to each of the volumes given below?  
(a)  $500 \text{ cm}^3$ , (b)  $5000 \text{ cm}^3$ , (c)  $1000 \text{ cm}^3$ .
- 10 State four characteristics of an efficient respiratory surface.
- 11 What process causes oxygen to pass from the alveoli into the lung capillaries?
- 12 Which of the following diseases are unlikely to be caused by smoking: (a) lung cancer, (b) tuberculosis, (c) bronchitis, (d) colds, (e) heart attacks?