

## 12 The blood circulatory system

1 How do white cells differ from red cells

- (a) in their structure,
- (b) their function?

2 Where are blood cells made in the body?

3 Name two proteins carried in the plasma.

4 What else is carried in the plasma?

5 Put the following events in their correct order starting with the first one listed:

*atria fill with blood, semi-lunar valves close, tricuspid and bicuspid valves close, ventricles contract, semi-lunar valves open, atria contract, ventricles relax, tricuspid and bicuspid valves open*

6 Fill in the missing words.

Oxygenated blood from the lungs returns to the ...(A)... atrium of the heart in the ...(B)... vein. From here it enters the ...(C)... ventricle and leaves the heart in the ...(D)... to go to the body.

From the body.....(E)...blood returns via the ...(F)...to the ...(G)... atrium, and then leaves the heart in the ...(H)..... artery to go to the ...(I)....

7 Which one of the following is not a characteristic of capillary blood vessels?

- (a) Repeatedly branched.
- (b) Small diameter.
- (c) Permeable to salts (ions)
- (d) Thick walled.

8 Arteries carry blood ..... the heart. Veins carry blood .....the heart.

9 In which parts of the circulatory system are there valves?

10 What is the connection between tissue fluid, plasma and lymph?

11 How is lymph propelled through the lymphatics?

12 What is the function of lymph nodes?

13 Complete the table.

Substance	Transported by the blood	
	<i>From</i>	<i>To</i>

Oxygen	(A)	whole body
(B)	whole body	lungs
(C)	liver	kidneys
(D)	intestine	(E)
Heat	(F)	(G)

Self-assessment questions

12.02

**The blood circulatory system (continued)**

**14** After a period of vigorous activity you would expect blood leaving a muscle to have

- (a) less carbon dioxide, less oxygen and less glucose
- (b) more carbon dioxide, more oxygen and less glucose
- (c) more carbon dioxide, more oxygen and more glucose
- (d) more carbon dioxide, less oxygen and less glucose.

**15** Blood from the alimentary canal returns to the heart by way of

- (a) hepatic vein and vena cava
- (b) hepatic artery, hepatic vein and vena cava
- (c) hepatic portal vein and vena cava
- (d) hepatic portal vein, hepatic vein and vena cava.

**16** Describe briefly how platelets, fibrin and red cells interact to form a blood clot.

**17** Briefly describe the principal lines of defence against bacteria entering the blood system.

**18** The substances produced by lymphocytes to combat bacterial cells are called

- (a) antigens,
- (b) antibodies,
- (c) antidotes,
- (d) antitoxins.

**19** You may acquire natural, active immunity to a disease if

- (a) you are injected with an antibody to the disease
- (b) you recover from an attack of the disease
- (c) you are inoculated, against the disease
- (d) you are born with antibodies to the disease?

**20** In each case, give an example of a disease to which immunity can be acquired by injecting

- (a) an inactivated bacterial toxin
- (b) a killed bacterium
- (c) an antibody.

**21** A person whose blood group is AB can receive a blood transfusion from

- (a) group O only
- (b) group AB only
- (c) groups A and B
- (d) any group.

**22** Apart from any inherited tendency towards coronary heart disease, what are thought to be the four main risk factors?