



Unit 5 • Physiological Structure and Life Process

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 32

1 Key words

[3]

Match each word in Column A with its description in Column B. Write the letter in the box. One description in Column B is not needed. Each match carries 0.5 mark.

Column A

1. red blood cells
2. white blood cells
3. platelets
4. plasma
5. pulmonary artery
6. sphygmomanometer

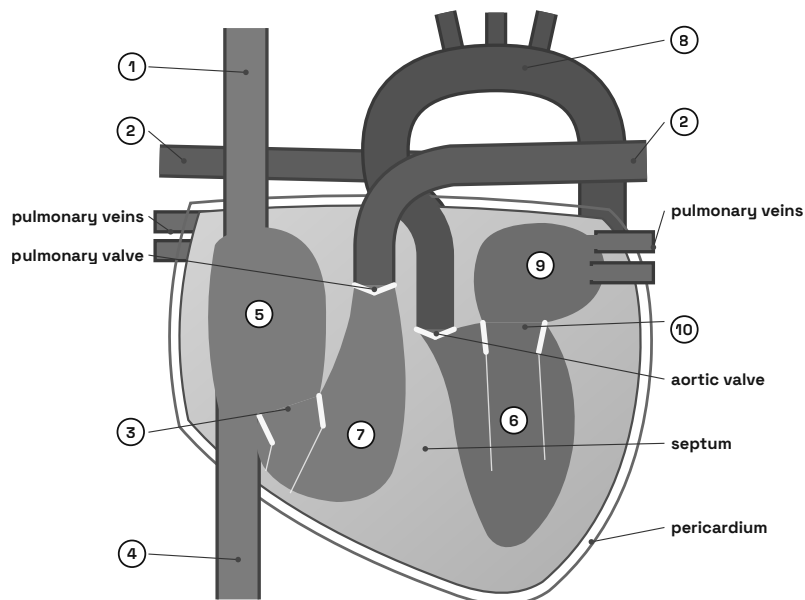
Column B

- | | |
|--------------------------|---|
| ☐ | a. measures blood pressure |
| ☐ | b. the pale yellow liquid part of blood, about 90% water |
| ☐ | c. fight germs and make antibodies |
| ☐ | d. carry oxygen, using the red pigment hemoglobin |
| ☐ | e. start the clot that stops bleeding |
| ☐ | f. carries oxygenated blood from the lungs to the heart |
| | g. carries deoxygenated blood from the heart to the lungs |

2 Label the diagram

[5]

The diagram shows the inside of the human heart, seen from the front. Name the parts numbered 1 to 10. Each carries 0.5 mark.



- | | | |
|-----------|----------|----------|
| 1. _____ | 2. _____ | 3. _____ |
| 4. _____ | 5. _____ | 6. _____ |
| 7. _____ | 8. _____ | 9. _____ |
| 10. _____ | | |



[5]

Choose the correct option for each of the following questions.

- i. Which disease is caused by a lack of hemoglobin? [1]
- a. diabetes
b. hemophilia
c. anemia
d. leukemia
- ii. What causes the systolic pressure on the wall of an artery when the ventricle contracts? [1]
- a. Excessive pressure is created inside the heart.
b. The pressure produced in the left ventricle is passed on to the artery.
c. The artery also contracts when the left ventricle contracts.
d. The blood becomes thicker when the left ventricle contracts.
- iii. The results of Rohit's blood test are shown in the table. What is his blood group? [1]
- | Antiserum | anti-A | anti-B | anti-D |
|-----------------------|--------|--------|----------|
| Blood clot (clumping) | seen | seen | not seen |
- a. A positive
b. O positive
c. AB positive
d. AB negative
- iv. Saambhawi hurt her leg on a stone while playing at school. Whatever was done, the bleeding didn't stop. What is the reason? [1]
- a. a lack of hemoglobin in the blood
b. a lack of white blood cells
c. a lack of platelets
d. a lack of red blood cells
- v. Rasmila's grandfather gets swollen joints and pain in his body when he eats red meat, legumes and fried food. What is his problem? [1]
- a. high blood pressure
b. high blood glucose
c. high uric acid
d. anemia

[3]

Write very short answers to the following questions.

- a. What is the normal blood pressure of a healthy adult? [1]
-
-
- b. Which two kinds of blood cells have no nucleus? [1]
-
-
- c. What is serum? [1]
-



5 Short answers

[6]

Write short answers to the following questions.

- a. Give a reason: the wall of the left ventricle is thicker than the wall of the right ventricle.

[2]

- b. Give a reason: arteries do not have valves, but veins do.

[2]

- c. A person's blood pressure is 130/90 mmHg. What does this mean?

[2]

6 Long answer

[4]

Write a long answer to the following question.

Study the table and answer.

Person	Injury	Flow of blood from the injured part
X	superficial	bled continuously; ordinary first aid didn't stop it
Y	deep	bled with high pressure; ordinary first aid stopped it
Z	superficial	bled for a while and stopped

- i. Which person has hemophilia? (1)
ii. In which person is an artery injured? (1)
iii. Which injury, Y's or Z's, is more dangerous? Give a reason. (2)



[4]

Pratima sat quietly for five minutes, then counted 19 beats of her pulse at the wrist in 15 seconds.

- What is her pulse rate per minute? (1)
- Is it in the normal range for a person at rest? Give a reason. (1)
- At this rate, how many times does her heart beat in one day? (2)

Answer:

[2]

A student drew this concept map of how blood flows: **left ventricle → kidney → left auricle**. What type of circulation does it show? Find the mistake in it and correct it.

(not marked)

Find the pulse at your wrist with your index and middle fingers (not your thumb). Count the beats for 15 seconds and multiply by 4.

When	Beats in 15 seconds	Pulse rate per minute ($\times 4$)
sitting quietly		
just after jumping on the spot for 1 minute		
after resting for 2 minutes		
a friend, sitting quietly		

What happened to your pulse rate after exercise? Why?

