Unit 26 · Frog: blood, breathing and reproduction

WORKSHEET

Full marks 35

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 35

1 Key words [4]

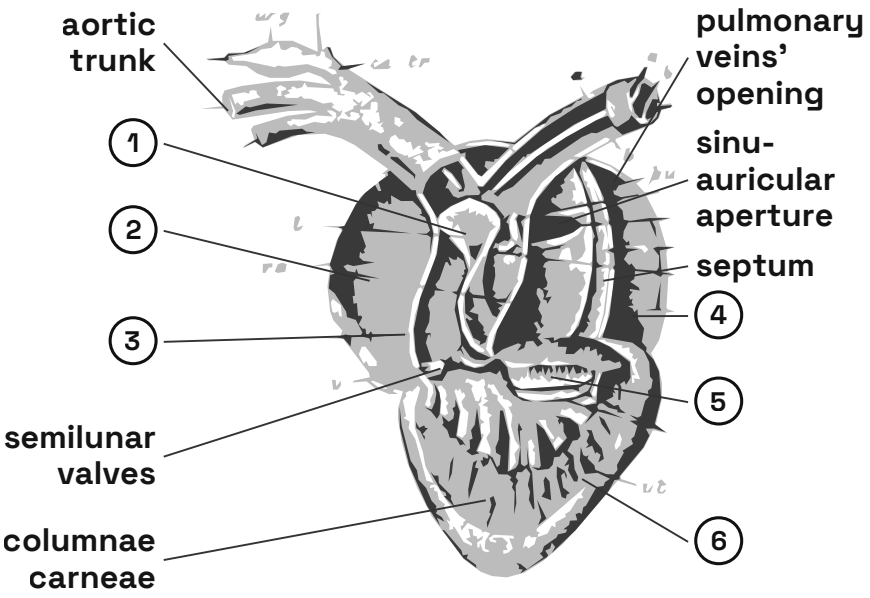
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

amplexus **chordae tendineae** **efferentia** **fat bodies** **myogenic** **petrohyal** **shift** **sinus venosus** **thrombocytes** **vitelline**

The frog's heart beats by itself, started in its own muscle: it is _____. The thin-walled chamber on the back of the heart where the three caval veins meet is the _____. Small, spindle-shaped nucleated cells that help the frog's blood to clot are _____. When bicarbonate leaves the red cell, chloride ions move in; this is the chloride _____. A frog fills its lungs by pumping air with the floor of its mouth, raised by the _____ muscles. In the male, 10–12 fine tubes, the vasa _____, carry sperms from each testis into the kidney. The yellow, finger-like _____ store fat for hibernation and breeding. The male's grip on the female's back while she lays her eggs is _____.

2 Label the diagram [3]

The diagram shows a frog's heart cut open from the front. Write the names of the parts 1 to 6. Each carries 0.5 mark.



1. _____ **2.** _____

3. _____ **4.** _____

5. _____ **6.** _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. In which covering is the heart enclosed? [1]

a. pericardium **b.** myocardium

c. pleura **d.** meninges

ii. Bidder's canal is in: [1]

a. the male's kidney **b.** the testis

c. the female's kidney **d.** the ureter

iii. Blood comes back from a frog's body to its heart. Which chamber does it enter first? [1]

a. the right auricle **b.** the sinus venosus

c. the left auricle **d.** the truncus arteriosus

iv. Why can't a frog breathe with its lungs if it keeps its mouth wide open? [1]

a. its tongue blocks the glottis

b. it pushes air into its lungs with its mouth, and an open mouth can't build up pressure

c. its nostrils only open when its mouth is shut

d. it has no muscles in its lungs

v. A biologist cuts across two blood vessels running side by side. Vessel P has a thick wall and a small round lumen; vessel Q has a thin wall, a wide lumen and has collapsed flat. Which is right? [1]

a. P is an artery and Q is a vein **b.** P is a vein and Q is an artery

c. both are capillaries **d.** P is a capillary and Q is an artery

4 Very short answers [3]

Write very short answers to the following questions.

a. Name the three ways in which an adult frog breathes. [1]

b. What is the frog's larva called, and how does it breathe at first? [1]

c. Give one difference between a frog's red blood cell and yours. [1]

5 Short answers [9]

Write short answers to the following questions.

a. Why is the male frog's ureter called a urinogenital duct, while the female's is not? [2]

b. What are the differences between granulocytes and agranulocytes? [2]

c. A frog in amplexus lays about a thousand eggs in a pond. Where are they fertilized, and why must the pair stay in the water to breed? [2]

d. Why are a frog's lungs less efficient than a mammal's? [3]

6 Long answers [8]

Write long answers to the following questions.

a. Describe how a frog fills its lungs with air (pulmonary inspiration). [4]

b. Describe the female reproductive organs of a frog. [4]

7 Think [3]

A frog has one ventricle, so the blood from its lungs and from its body mix in it. Yet a frog lives well, while a mammal with a hole between its ventricles becomes ill. Explain why mixed blood is not a big problem for a frog.

8 Activity: Three ways of breathing

(not marked)

Fill in the table from the unit.

	Cutaneous	Bucco-pharyngeal	Pulmonary
surface used			
when it is used			
how air or water reaches it			

Which of the three keeps a hibernating frog alive?