



PERL EDUCATION

PRIMARY EDUCATION & RIGHTEOUSNESS LEARNING

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Ch - 8: The Circulatory System

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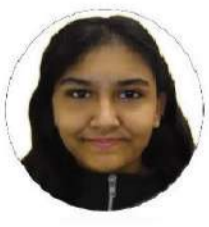
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Short Questions

Question 1: Why is circulatory system also known as transport system ?

Question 2: Write about origin and functions of Red Blood Corpuscles.

Question 3: Complete the following table:

Components	Origin	Function	Approx. No. (mm ³)	Life span
RBCs				
WBCs				
Platelets				

Question 4: Define the following terms Diapedesis.

Question 5: State any five functions of blood.

Question 6: The table below is designed to indicate the transport of certain substances in our body. Fill in the blanks with suitable answers:

	Substance	From	To
(i)	_____	Lungs	Whole body
(ii)	Carbon dioxide	_____	_____
(iii)	Urea	_____	_____
(iv)	Digested carbohydrates	Intestine	_____
(v)	_____	_____	Target organs
(vi)	Heat	_____	Whole body.

Question 7: Why are capillaries thin walled ?

Question 8: Describe the role of lymph.

Question 9: Name the blood vessels entering the heart and leaving the heart.

Question 10: Name the Blood vessels entering liver and kidney and Blood vessels leaving liver and kidney.

Question 11: What does the term 'double circulation' mean ?

Question 12: In what ways does the blood entering the kidney differ from that leaving the kidney ?

Question 13: What is blood pressure ? How is it measured ?

Question 14: What is the value of systolic B. P. and diastolic B. P. of a normal human adult ?

Question 15: Write short note on Tissue Fluid.

Question 16: The table below is designed to indicate the major arteries emerging from the aorta and supplying blood to different organs. Fill in the blanks with suitable answers.

	Name of artery	Supplying to
(i)	.....	Kidney
(ii)	Genital	.....
(iii)	.....	Right forelimb
(iv)	Phrenic	.....
(v)	.....	Liver
(vi)	.....	Chest.

Question 17: Describe in brief die cardiac cycle.

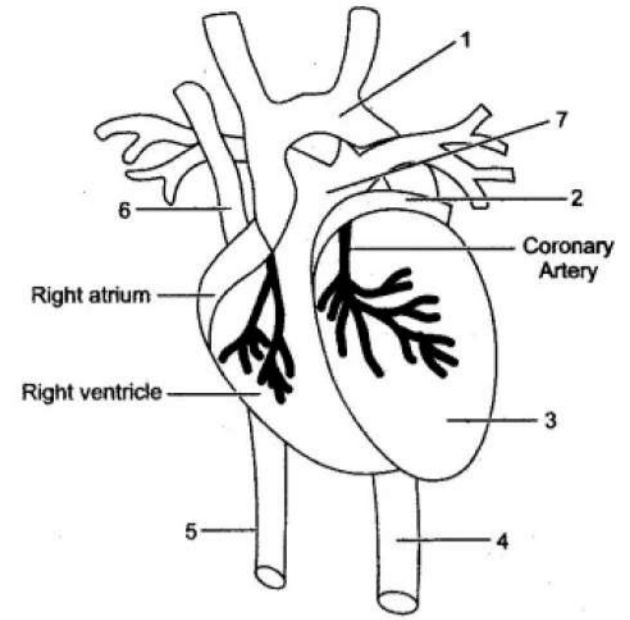
Question 18: When are the sounds 'LUBB' and 'DUB' produced during heart beat ?

Question 19: What is the Rh-factor.

Diagram Based Questions

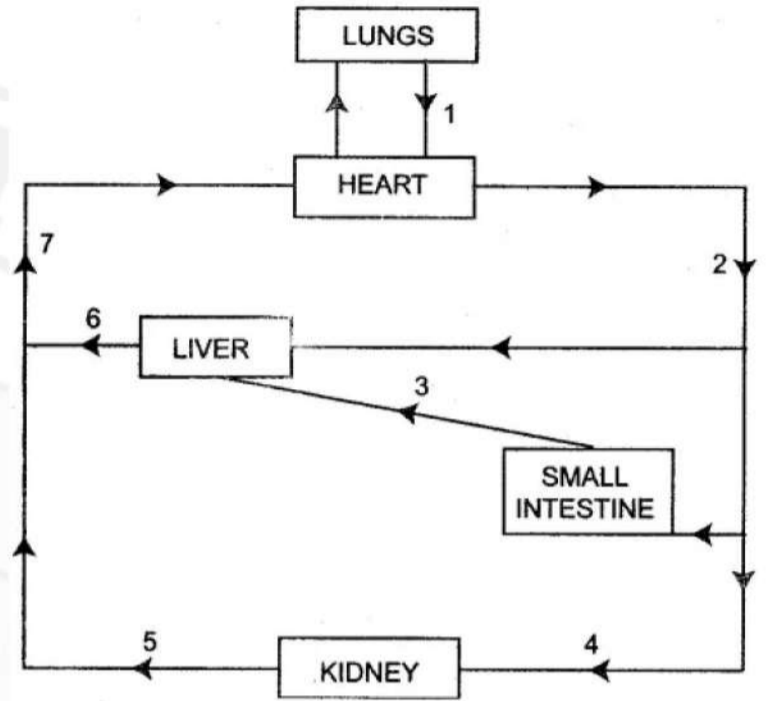
Question 1: Given alongside is a diagram of the external features of the heart.

- (i) Name the parts '1' to '7'
- (ii) what happens if the coronary artery gets an internal clot?
- (iii) which type of blood does part '5' carry?
- (iv) Mention one structural difference between part '5' and '4'.



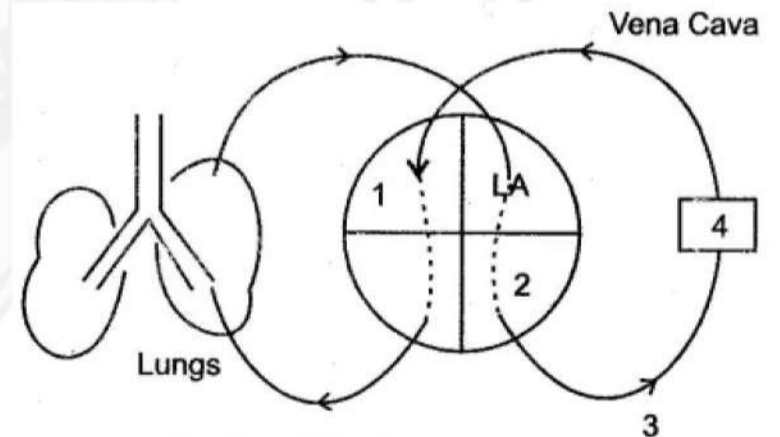
Question 2: Given below is the simplified pathway of the circulatory system :

- (i) Name the blood vessels marked 1 to 8.
- (ii) Name the chamber of the heart which:
 - (a) Receives blood from '1'.
 - (b) Pumps blood into blood vessel '8'.
- (iii) Mention two structural differences between blood vessels '7' and '2'.



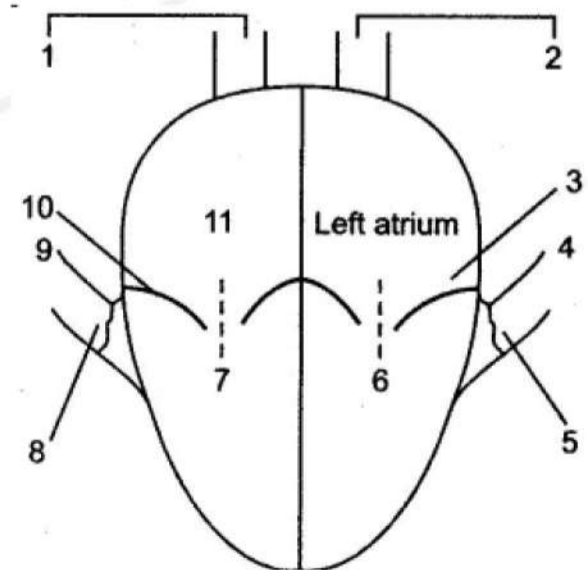
Question 3: Given below is a schematic representation of the circulatory system in man. Study the same and answer the questions that follow:

- (i) Label the parts 1 to 4 indicated in the diagram.
- (ii) Give one difference between the parts 1 and 2 based on:
 - (a) their structure
 - (b) the nature of blood flowing through them.
- (iii) What is the specific name of the type of blood circulation that takes place between the heart and the lungs ?
- (iv) Name the valve found at the beginning of the part labeled 3.



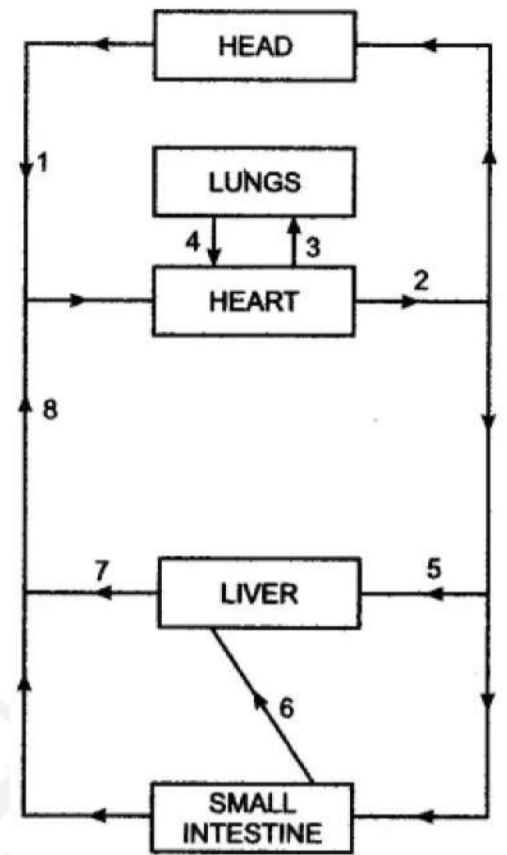
Question 4: Given alongside is a highly diagrammatic sketch of the internal structure of the human heart:

- (i) Name the parts numbered 1-11.
- (ii) What is the main difference in the quality of blood contained in parts 6 and 7 ?

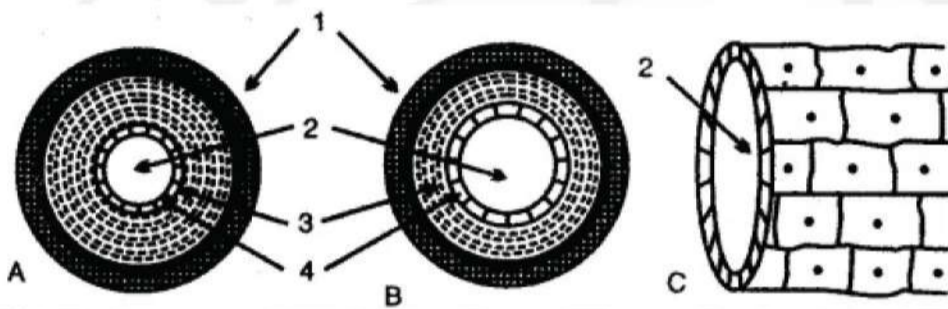


Question 5: The diagram below represents the simplified pathway of the circulation of blood. Study the same and answer the questions that follow:

- (i) Name the blood vessels labeled 1 and 2.
- (ii) State the **function of blood vessels** labeled 5 and 8.
- (iii) What is the importance of the blood vessel labeled 6 ?
- (iv) Which blood vessel will contain a high amount of glucose and amino acids after a meal ?
- (v) Draw a diagram of the different blood cells as seen in a smear of human blood.



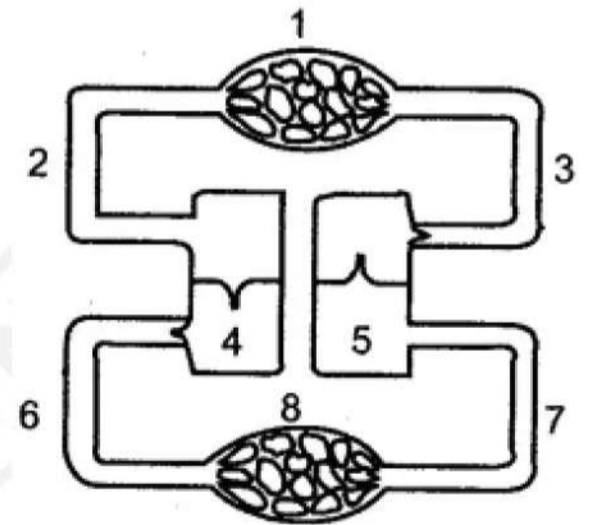
Question 6: The figures given below are cross-sections of blood vessels.



- (i) Identify the blood vessels A, B and C.
- (ii) Name the parts labeled 1-4.
- (iii) Mention two structural differences between A and B.
- (iv) Name the type of blood A that flows (a) through A, (b) through B.
- (v) In which of the above vessels referred to in (iv) above does exchange of gases actually take place ?

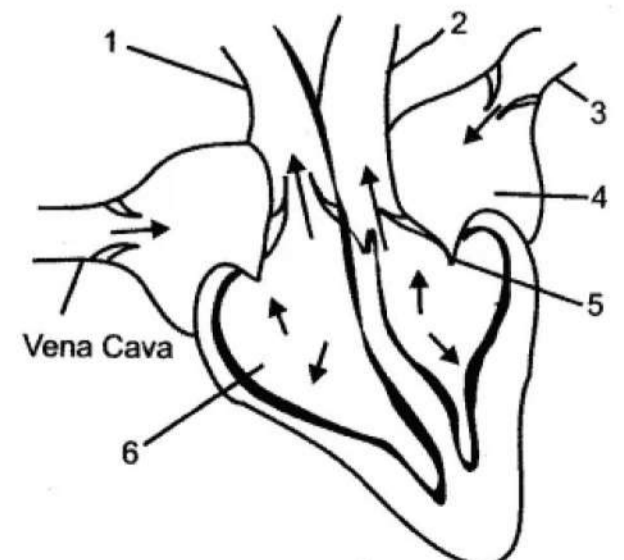
Question 7: Given below is a simple diagram of the circulation of blood in a mammal showing the main blood vessels, the heart, lungs and body tissues. The blood vessel labeled 6 contains deoxygenated blood and 2 the valve leading to it has three semi-lunar pockets.

- (i) Name the blood vessels of organs marked by number 1 to 8.
- (ii) What do you mean by the term 'double circulation' of blood in mammals ?
- (iii) What is diastole ?

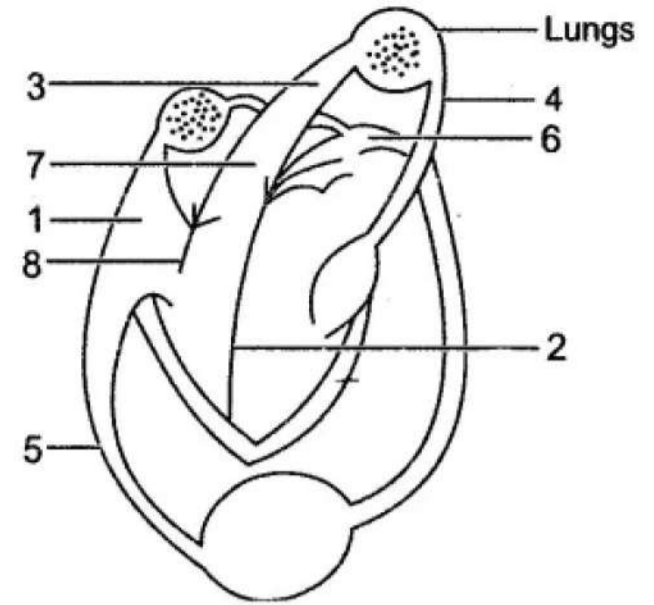


Question 8: The diagram given below represents the human heart in one phase of its activity. Study the same and then answer the questions that follow:

- (i) Name the phase.
- (ii) Which parts of the heart are contracting in this phase ? Give a reason to support your answer.
- (iii) Name the part numbered 1 to 6.
- (iv) What type of blood flows through the parts marked '1' and '2'?
- (v) How many valves are closed in this phase?

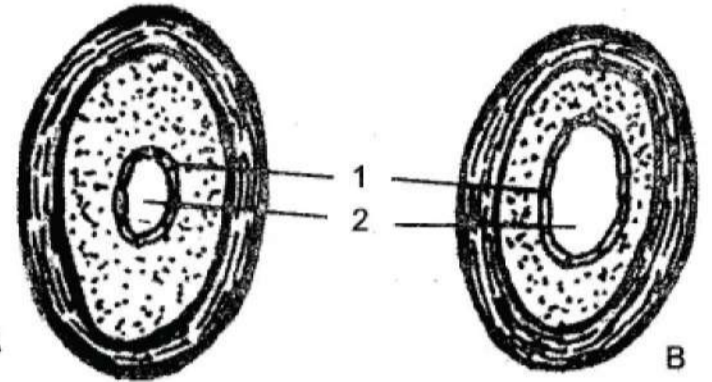


Question 9: The figure below represents the internal structure of a mammalian heart and the associated blood vessels.



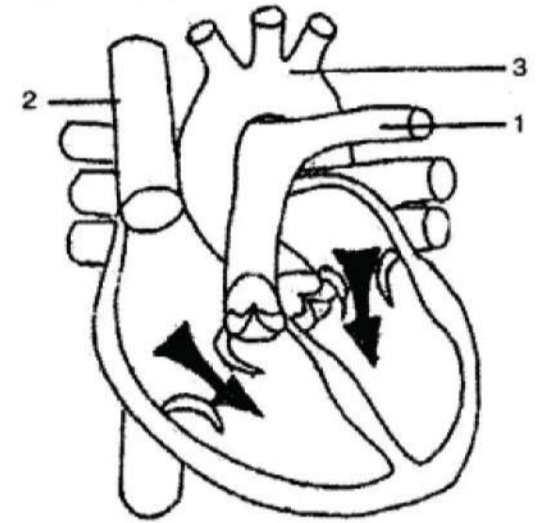
- (i) (a) Name each of the structures labeled 1, 2, 3, 4, 5, 6, 7 and 8.
- (b) State the function of each of the structures 5, 6, 7 and 8.
- (ii) (a) State the function of heart as an entire organ.
- (b) Why are the walls of the left ventricle more muscular than the right ?

Question 10: The diagrams given below show the cross section of two kinds of blood vessels:



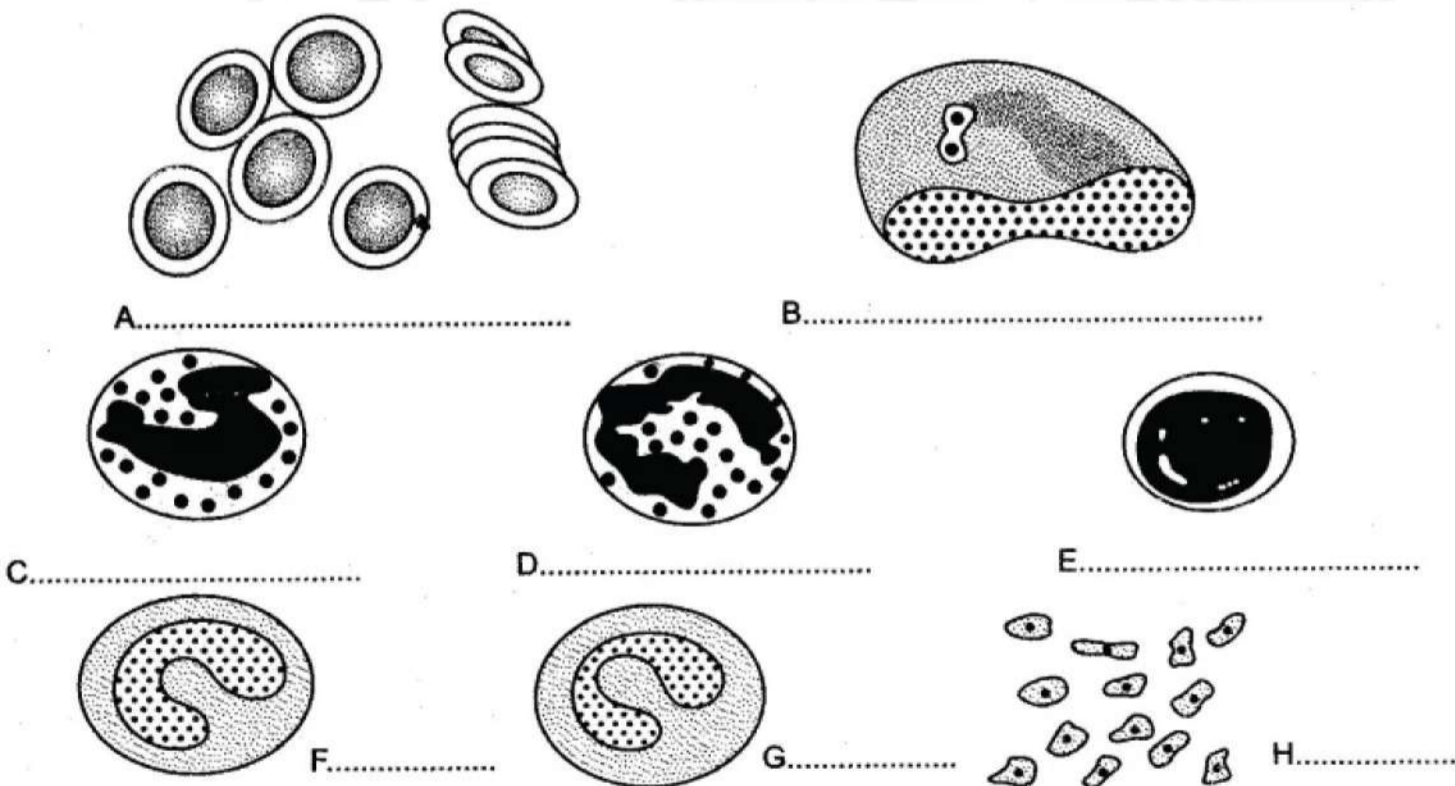
- (i) Identify the blood vessels A and B. In each case give a reason to support your answer.
- (ii) Name the parts numbered 1 and 2.
- (iii) When are the sounds "LUBB" and "DUB" produced during a heartbeat ?
- (iv) Name the blood vessel that
 - (a) begins and ends in capillaries.
 - (b) supplies blood to the walls of the heart.

Question 11: The diagram given below represents the human heart in one phase of its functional activities. Study the same and answer the questions that follow:



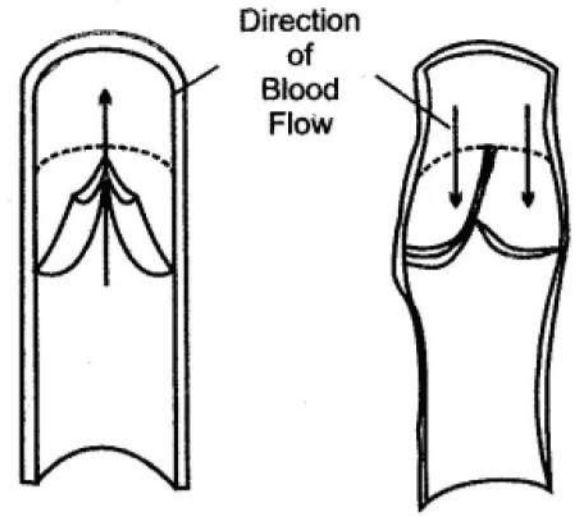
- (i) Name the phase.
- (ii) Label the parts 1, 2 and 3
- (iii) Which part of the heart is contracting in this phase ? Give a reason to support your answer.

Question 12: The diagram shows different types of blood cells, Name them.



Question 13: The diagram below represents a certain category of blood vessels showing the role of a special structure in their walls :

- (i) Name the kind of blood vessels shown.
- (ii) What is the structure shown inside the blood vessels ?
- (iii) What is the role of these structures ?
- (iv) Are these structures present in any other kind of blood vessel ? If so, name it.
- (v) Towards which side of the figure (Top or Bottom) is the heart located ?



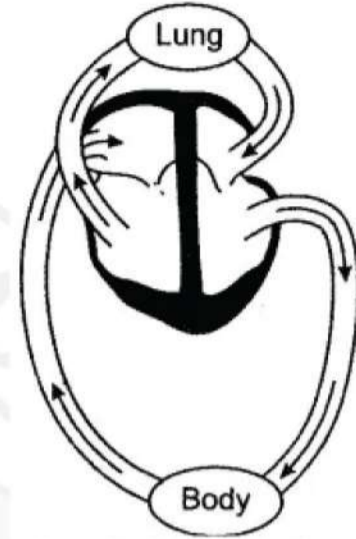
Question 14: The diagram represents the 'closed system' or 'double circulation' of blood in mammals.

Justify the above statement.

State two structural and two functional differences between the arteries and veins.

State the changes in the composition of blood as it passes through the following organs :

- (a) Lungs (b) Gut (c) Liver (d) Kidneys.



Explain the Terms

Question:

- 1. Blood Pressure
- 2. Pulse rate
- 3. Double Circulation
- 4. Hepatic Portal System
- 5. Diapedesis
- 6. Haemopoiesis
- 7. Phagocytosis
- 8. Electrocardiogram (ECG)
- 9. Pace maker

Name the Following

Question:

- 1. The study of blood vascular system including arteries, veins and heart.
- 2. Number of chambers present in the human heart.
- 3. Name the muscles which made up the wall of the heart.
- 4. Layer, which surrounds the heart.
- 5. The blood vessel leaving the left ventricle of the mammalian heart.
- 6. The valve present between the left atrium and the left ventricle.
- 7. The blood vessel supplying blood to the kidney.
- 8. The blood vessel that begins and ends in capillaries.
- 9. The blood vessels which have valves in them.
- 10. The fine blood vessels in the tissues through which exchange of materials occurs
- 11. The number of RBCs in men.
- 12. The instrument by which RBC are counted is called.
- 13. Oxygen is transported by the blood in the form of
- 14. The enzyme which converts fibrinogen to fibrin.
- 15. The blood plasma from which fibrinogen has been removed.
- 16. By which the human body is protected from invading bacteria.

Fill in the Blanks

Complete the following sentences with appropriate words :

1. The iron pigment _____ gives red colour to the blood.
2. The _____ is the most powerful organ in the circulatory system.
3. The average heartbeat rate is _____ beats per minute in human being.
4. In man (human), heart has _____ chambers.
5. The erythrocytes contain an iron-rich pigment called _____.
6. Non-coagulation of blood is called _____.
7. When oxygen is in fairly high concentration, the haemoglobin quickly combines with it and forms an unstable compound known as _____.
8. The element required for blood clotting is _____.
9. _____ helps in blood clotting.
10. The three distinct types of blood vessels are _____, _____ and the _____.
11. The site of production of W.B.Cs in the embryo is _____.
12. The _____ is referred to as the graveyard of red blood corpuscles and the _____ referred to as the cradle of red blood corpuscles.
13. The red blood corpuscles are _____ and _____ shaped cells without _____.
14. The fluid in the space between the tissue cell is called _____.
15. The foundations of physiology were laid by the physician _____.
16. Beside food, oxygen and waste materials, circulatory system transports _____ to various parts of the body.
17. _____ are the blood vessels which usually carry oxygenated blood.
18. The chamber of heart which pumps blood into aorta is _____.
19. Arteries are _____ walled and the veins are _____ walled vessels.
20. The blood vessel which transports blood from heart to an organ is called _____.
21. The sequence of one systole followed by one diastole is termed as the _____.
22. The membranous covering of the heart is _____.
23. The heart is made up of special muscles, the _____ muscles.
24. The blood vessel that begins and ends in capillaries is the _____.
25. The blood vessel leaving the left ventricle of the mammalian heart is the _____.

State the Location

Name	Location
Hepatic portal vein	
Tonsils	
Spleen	
Sino-auricular node	
Bicuspid valve	
Pulmonary vein	
Semilunar valves of the heart	
Bundle of His	

State the Function

Write the functional activity of the following structures:

Name	Function
Pulmonary vein	
Thrombocytes	
Semilunar valves of the heart.	
Bundle of His	
Coronary artery	
Bicuspid valve	
Haemoglobin	
Vitamin K	
Pericardium	
Pulmonary artery	
Lymph	
W.B.C.	
R.B.C.	
Platelets	
Tricuspid valve	
Chordae tendinae	
Vena cava	

Choose the Odd One Out

- Human heart, Fish heart, Reptile heart, Toad heart.
- Artery, Vein, Portal vein, Lacteal.
- RBC, ATP, WBC, Platelets.
- Purkinje fibres, A. V. node, A. V. valve, S. A. node.
- Mitral valve, Tricuspid valve, Semilunar valve, Venous valve.
- Systolic pressure, Diastolic pressure, Stethoscope, Sphygmomanometer.

Multiple Choice Questions

1. The function of WBC is:

- (a) To distribute heat (b) To protect enzymes (c) To cause blood clotting (d) To destroy bacteria

3. The chief function of lymph nodes in mammals is to:

- (a) Produce WBC's (b) Produce hormones (c) Destroy old RBC's (d) Destroy pathogens

2. Agranulocytes are:

- (a) Lymphocytes, monocytes (b) Lymphocytes, basophils
(c) Eosinophils, basophils (d) Eosinophils, monocytes

4 What will happen if the spleen of a man is removed?

- (a) W.B.C. production will be lowered
(b) Removal of dead RBC will not take place
(c) Antibody production will be decreased
(d) R.B.C. production will be stopped

5. Which protein is used in preventing dotting of blood?

- (a) Albumin (b) Heparin (c) Fibrinogen (d) Globulin

6. The beating of the heart of man is heard on the left side, because:

- (a) The left ventricle is towards the left side
(b) Both the ventricles are towards the left side
(c) Contraction of heart is powerful on left side.
(d) The dorsal aorta is on the left side

7. Arteries are:

- (a) Thin walled and blood flows under diminished pressure
(b) Thick walled and blood flows under high pressure
(c) Thin walled and blood flows under low pressure
(d) Thick walled and blood flows under diminished pressure

8. What is blood pressure?

- (a) The pressure of blood on the heart muscles
(b) The pressure of blood exerted on the walls of arteries and veins
(c) The pressure of blood on the walls of veins only
(d) The pressure of blood on the walls of arteries only

9. Erythroblastosis foetalis can occur when:

- (a) Man Rh⁻ and woman Rh⁺ (b) Man Rh⁺ and woman Rh⁻
(c) Man Rh⁺ and woman Rh⁺ (d) Man Rh⁺ and woman Rh⁻ +ve

10. Blood pressure is measured by:

- (a) Electrocardiogram (ECG) (b) Stethoscope (c) Sphygmomanometer (d)

Pulse rate

Match the Column

Column 'II' is a list of items related to ideas in Column 'I'. Match the term in Column 'II' with the suitable idea given in Column 'I'.

Column I	Column II
(i) Superior vena cava	(a) Collect deoxygenated blood from the wall of the heart.
(ii) Inferior vena cava	(b) Carry oxygenated blood to heart muscle.
(iii) Pulmonary vein	(c) Collects deoxygenated blood from upper part.
(iv) Coronary veins	(d) Collects deoxygenated blood from lower parts.
(v) Coronary artery	(e) Brings oxygenated blood from lungs.
(vi) Aorta	(f) Large artery
(vii) Heart attack	(g) Large vein
(viii) Blood Pressure	(h) Oxygenated blood
(ix) Tricuspid valve	(i) Sphygmomanometer
(x) Bicuspid valve	(j) Allows blood flow from right auricle to right ventricle.
(xi) Contraction and relaxation of heart	(k) Blocking of coronary arteries.
	(l) Cardiac muscle.
	(m) Allows blood flow from left auricle to left ventricle.
	(n) Allows blood flow from right ventricle of pulmonary aorta.