Body Fluids and Circulation

Chapter 18

FACT/DEFINITION TYPE QUESTIONS

1. Lymph differs from blood in
(a) absence of RBC (b) absence of WBC
(c) excess of water (d) absence of protein

2. Lymph is modified blood that contains
(a) RBC and WBC
(b) RBC, WBC and protein
(c) WBC and all protein
(d) all contents of blood except RBC and certain protein

3. In blood
(a) WBCs are more than RBCs
(b) RBCs are more than WBCs
(c) RBCs are less than platelets
(d) Platelets are less than WBCs

4. Which one engulfs pathogens rapidly?
(a) Acidophils (b) Monocytes
(c) Basophils (d) Neutrophils

5. What is true about leucocytes ?
(a) Their sudden fall in number is indication of blood cancer
(b) These are produced in thymus
(c) These are enucleated
(d) These can squeeze out through the capillary walls

6. Which of the following is considered as the soldiers of body?
(a) Lungs (b) Capillaries
(c) Red blood cells (d) White blood cells

7. Which of the following is responsible for ABO grouping?
(a) Presence or absence of clotting factors.
(b) Compatibility of blood groups during blood transfusion.
(c) Presence or absence of surface antigens (A and B) on WBCs.
(d) Presence or absence of two surface antigens (A and B) on the RBCs.

8. What is correct for blood group 'O'?
(a) No antigens but both a and b antibodies are present
(b) A antigen and b antibody
(c) Antigen and antibody both absent
(d) A and B antigens and a, b antibodies

9. Rh factor is named after
(a) monkey (b) *Drosophila*
(c) rat (d) man

10. When the blood of a foetus is agglutinated by its mother's Rh antibodies, then which of the following condition arises as a severe anaemia?
(a) Immunization
(b) Ectopic pregnancy
(c) Erythroblastosis foetalis
(d) Both (b) and (c)

11. _____ plays an important role in blood clotting.
(a) Sodium (b) Chlorine
(c) Calcium (d) Potassium

12. Which of the following cations is required for the conversion of prothrombin into active thrombin by thromboplastin?
(a) Cu^{2+} (b) Fe^{3+}
(c) Fe^{2+} (d) Ca^{2+}

13. Clotting of blood is to
(a) seal up wounds and prevent blood loss.
(b) slow down the movement of blood inside the blood vessels.
(c) trap oxygen inside the blood so that it can be carried around more easily.
(d) trap harmful germs inside the blood and prevent them from harming the body.

14. Fish has ___(i)____ and ___(ii)___ circulatory system.
(a) (i)- open, (ii)- single
(b) (i)- open, (ii)- double
(c) (i)- closed, (ii)- single
(d) (i)- closed, (ii)- double

15. Open type blood vascular system is found in
(a) earthworm (b) lizard
(c) cockroach (d) toad

16. Which of the following set of animals has an incomplete double circulation system ?
(a) Frog and crocodile (b) Shark and whale
(c) Lizard and pigeon (d) Toad and lizard

17. Heart is covered by
(a) peritoneum (b) pleural membrane
(c) pericardium (d) visceral membrane

18. Nodal tissue/musculature in human heart has
(a) the ability to generate action potential due to any external stimuli.
(b) two patches, one in atrium and other in ventricle.
(c) purkinje fibres throughout the ventricular musculature.
(d) atrioventricular node, also called pacemaker.

19. Pulmonary vein, carrying oxygenated blood, opens into
(a) left auricle (b) right auricle
(c) left ventricle (d) right ventricle

20. The pacemaker of the human heart is
(a) SA node (b) tricuspid valve
(c) AV node (d) SV node

21. Which one of the following blood vessel is without valves?
(a) Artery (b) Pulmonary aorta
(c) Vein (d) Systemic aorta

22. Contraction of the ventricle in the heart begins by the command from
(a) Purkinje fibres (b) AV node
(c) chordae tendinae (d) SA node

23. The opening of auricles into ventricles on the right side is guarded by which valve?
(a) Tricuspid (b) Bicuspid
(c) Semilunar (d) Mitral valve

24. Bicuspid valve allows blood from
(a) right auricle to left ventricle.
(b) right auricle to right ventricle.
(c) left auricle to left ventricle.
(d) post caval to heart.

25. 'Bicuspid' term is applied to
(a) a valve in heart and a bone of pelvic girdle.
(b) a muscle in upper arm and a valve in heart.
(c) a valve in heart and tooth surface.
(d) a valve in heart.

26. 'Bundle of His' is a part of which one of the following organs in humans?
(a) Brain (b) Heart
(c) Kidney (d) Pancreas

27. Which of the following has the thickest walls?
(a) Right ventricle (b) Left ventricle
(c) Right auricle (d) Left auricle

28. A four-chambered heart is found in
(a) mammals only
(b) humans only
(c) all vertebrates
(d) some reptiles, all birds and mammals

29. Sinu-atrial node in human heart is embedded in the wall of
(a) sinus-venosus
(b) interatrial septum
(c) right atrium
(d) atrioventricular septum

30. Which term does not apply to human heart?
(a) Pacemaker (b) Four chambered
(c) Mitral valve (d) Neurogenic

31. What is the function of valve?
(a) To prevent blood from flowing into the aorta.
(b) To push blood into the ventricle.
(c) To push blood into the aorta.
(d) To prevent backflow of blood into the left ventricle.

32. A blockage in aortic valve would directly reduce blood flow to the _____.
(a) heart (b) liver
(c) lungs (d) brain

33. In mammals the blood from the right ventricle goes to
(a) systemic aorta (b) precavals
(c) truncus arteriosus (d) pulmonary aorta

34. The heart sound 'dupp' is produced when
(a) tricuspid valve is opened.
(b) mitral valve is opened.
(c) mitral valve is closed.
(d) semi-lunar valves at the base of aorta get closed.

35. The first heart sound is
(a) 'LUBB' sound produced at the end of systole.
(b) 'DUP' sound produced at the end of systole.
(c) 'LUBB' sound produced at the beginning of systole.
(d) 'DUP' sound produced at the beginning of systole.

36. Closure of which of the following valves makes louder sound of heart beat?
(a) Mitral valve (b) Seminular valve
(c) Auriculo-ventricular valve
(d) Tricuspid valve

37. Cardiac cycle in man takes about
(a) 0.5 seconds (b) 1.0 second
(c) 1.2 seconds (d) 0.8 seconds

38. The pattern of contraction and relaxation of the heart is referred to as
(a) blood pressure (b) arterial flow
(c) blood flow (d) cardiac cycle

39. 'P' wave of ECG occurs before the
(a) onset of ventricular contraction.
(b) end of arterial contraction.
(c) beginning of atrial contraction.
(d) none of the above.

40. QRS is related to
(a) ventricular contraction
(b) auricular contraction
(c) cardiac cycle
(d) auricular relaxation

41. The largest artery in the body is
(a) aorta (b) precaval
(c) vena cava (d) pulmonary artery

42. Pulmonary artery arises from
(a) right atrium (b) left atrium
(c) right ventricle (d) left ventricle

43. Which circulation provides nutrients and oxygen to cardiac muscle tissue?
(a) Pulmonary circulation
(b) Systemic circulation
(c) Lymphatic circulation
(d) Coronary circulation

44. Which structures are directly involved in the pulmonary circulation?
(a) Right atrium, aorta and left ventricle.
(b) Left ventricle, aorta and inferior vena cava.
(c) Superior vena cava, right atrium and left ventricle.
(d) Right ventricle, pulmonary arteries and left atrium.

45. Which structures are directly involved in the "systemic circulation"?
(a) Superior vena cava, right ventricle and left ventricle.
(b) Right ventricle, pulmonary arteries and left atrium.
(c) Left ventricle, aorta and inferior vena cava.
(d) Right atrium, pulmonary trunk and left ventricle.

46. Which of the following carries oxygenated blood?
(a) Renal vein (b) Hepatic portal vein
(c) Hepatic vein (d) Pulmonary vein

47. Which of the following parts of heart possess semilunar valves?
(i) Aorta (ii) Vena cava
(iii) Pulmonary artery (iv) Pulmonary vein
(a) (i) and (iii) (b) (i), (ii) and (iii)
(c) (ii) and (iii) (d) (i), (iii) and (iv)

48. In adult man, normal BP is
(a) 100/80 mm Hg (b) 120/80 mm Hg
(c) 100/120 mm Hg (d) 80/120 mm Hg

49. Pulse beat is measured from
(a) capillaries (b) arteries
(c) veins (d) nerves

50. Coronary artery disease (CAD) is often referred to as
(a) heart failure (b) cardiac arrest
(c) atherosclerosis (d) angina

51. Hardening of the arteries due to deposition of cholesterol is called
(a) thrombosis (b) atherosclerosis
(c) rhinitis (d) angina

52. In arteriosclerosis
(a) arterial walls become very thin and weak so that the blood oozes out of the walls.
(b) sex linked heredity is involved.
(c) blood coagulates even in the arteries.
(d) arterial walls become inelastic and thickened.

STATEMENT TYPE QUESTIONS

53. Mark the incorrect statement regarding normal ECG.
(a) Patient is connected to 3 electrical leads (one to each wrist and to the left ankle).
(b) 'T' wave represents atrial repolarization.
(c) Q marks the beginning of ventricular systole.
(d) R represents ventricular depolarization.

54. Given below are four statements (a-d) regarding human blood circulatory system
(i) Arteries are thick-walled and have narrow lumen as compared to veins.
(ii) Angina is acute chest pain when the blood circulation to the brain is reduced.
(iii) Persons with blood group AB can donate blood to any person with any blood group under ABO system.
(iv) Calcium ions play a very important role in blood clotting.
Which two of the above statements are correct?
(a) (i) & (iv) (b) (i) & (ii)
(c) (ii) & (iii) (d) (iii) & (iv)

55. What is true about RBCs in humans?
(a) They carry about 20–25 per cent of CO_2.
(b) They transport 99.5 per cent of O_2.
(c) They transport about 80 per cent oxygen only and the rest 20 per cent of it is transported in dissolved state in blood plasma.
(d) They do not carry CO_2 at all.

56. Find out the incorrect statement from the following.
(a) Veins are typically larger in diameter than arteries.
(b) Because of their small size, capillaries contain blood that is moving more quickly than in other parts of the circulatory system.
(c) The walls of arteries are elastic, enabling them to stretch and shrink during changes in blood pressure.
(d) Veins contain more blood than any other part of the circulatory system.

57. Which one of the following statements is correct regarding blood pressure?
(a) 190/110 mmHg may harm vital organs like brain and kidney.
(b) 130/90 mmHg is considered high and requires treatment.
(c) 120/80 mmHg is considered an ideal blood pressure.
(d) 105/50 mmHg makes one very active.

58. Cardiac output is/are
(i) Product of heart rate and stroke volume.
(ii) Product of auricular and ventricular volume.
(iii) A process in which blood pumped in one minute.

Which of the above statements is true ?

(a) Only (i) (b) Only (ii)
(c) Both (i) and (ii) (d) Both (i) and (iii)

59. Which of the following statements is/are correct for blood group?

(i) Blood group O is universal donor.
(ii) Blood group AB is universal acceptor.
(iii) Blood group A contains antigen B and anti-A antibodies.
(iv) Blood group B contains antigen B and anti-A antibodies.

(a) Only (i) and (ii). (b) Only (i), (ii) and (iii).
(c) Only (i), (ii) and (iv). (d) Only (i), (iii) and (iv).

60. Which of the following statements is correct regarding joint diastole?

(a) Both atria relax but ventricles contract.
(b) Both ventricles relax but atria contract.
(c) Both semilunar valves are open.
(d) Tricuspid and bicuspid valves are open.

61. Which of the following statements is correct regarding pulmonary artery ?

(a) It carries deoxygenated blood from heart to lungs.
(b) It carries deoxygenated blood from lungs to heart.
(c) It carries oxygenated blood from heart to lungs.
(d) It carries oxygenated blood from lungs to heart.

62. Which one of the statement is correct with reference to the circulation of blood in a mammal?

(a) Left auricle receives oxygenated blood.
(b) Pulmonary artery carries oxygenated blood to the lungs.
(c) Blood from the lungs is returned to heart through 2-veins, one from each lung.
(d) None of the above.

63. Which of the following statement is correct regarding lymph?

(a) It transports oxygen to brain.
(b) It transport CO_2 to lungs.
(c) It returns interstitial fluid to blood.
(d) It returns RBCs and WBCs to lymph nodes.

64. Which of the folowing statement best defines artery?

(a) It carries blood from one visceral organ to another visceral organ.
(b) It carries oxygenated blood to the different organs.
(c) It carries blood away from the heart to different organs.
(d) It breaks up into capillaries which reunite to form a vein.

65. Which of the following statement is correct regarding blood cells?

(a) A healthy individual has 12 - 16 gms of haemoglobin in every 200ml of blood.
(b) RBC as an average life span of 120 days after which they are destroyed in the spleen.
(c) Neutrophils and basophils are phagocytic cells which destroy foreign organisms entering the body.
(d) A reduction in the number of WBC leads to clotting disorders which will lead to excessive loss of blood from the body.

ASSERTION/REASON TYPE QUESTIONS

In the following questions, a statement of Assertion is followed by a statement of Reason.

(a) If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
(b) If both Assertion and Reason are true but the Reason is not the correct explanation of the Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

66. **Assertion :** SAN is called the pacemaker of heart.
Reason : The SAN can generate the maximum number of action potentials and is responsible for initiating and maintaining the rhythmic contractile activity of the heart.

67. **Assertion :** Lub is a heart sound which is produced during each cardiac cycle.
Reason : It is associated with the closure of the tricuspid and bicuspid valves.

68. **Assertion :** Saline water is not given to patients with hypertension.
Reason: Saline water can cause vomiting and may drop blood pressure suddenly causing cardiac arrest.

69. **Assertion :** Blood pressure is arterial blood pressure.
Reason : Blood pressure is measured by sphygmomanometer.

70. **Assertion:** WBCs accumulate at the site of wounds by diapedesis.
Reason: It is squeezing of leucocytes from endothelium.

71. **Assertion :** Blood coagulates in uninjured blood vessels.
Reason : Uninjured blood vessels release an anticoagulant heparin.

72. **Assertion :** Prothrombinase enzyme acts as antiheparin.
Reason : Heparin prevents coagulation of blood in blood vessels.

73. **Assertion :** When there is a fall in the blood pressure due to loss of blood volume, this is compensated by vasoconstriction of veins.
Reason : Veins hold the extra amount of blood which can be shifted to the arteries as required.

MATCHING TYPE QUESTIONS

74. In which of the following options the types of heart is correctly matched to their respective group of animals?

(a) Two chambered heart- Fishes and amphibians
(b) Three chambered heart- Amphibians and birds
(c) Four chambered heart- Birds and mammals
(d) Three chambered heart- Reptiles and mammals

75. Which one of the following is a matching pair?
(a) Lubb-Sharp closure of AV valves at the beginning of ventricular systole.
(b) Dup-Sudden opening of semilunar valves at the beginning of ventricular diastole.
(c) Pulsation of the radial artery-Valves in the blood vessels.
(d) Purkinje fibres-Initiation of the heart beat.

76. In a standard ECG, which one of the following alphabets is the correct representation of the respective activity of the human heart?
(a) P-Depolarization of the atria
(b) R-Repolarization of ventricles
(c) S-Start of systole
(d) T-End of diastole

77. Match the following descriptions (given in column-II) of each type of blood cell to their names (given in column-I).

	Column-I (Blood cell)		**Column-II (Description)**
A.	Erythrocyte	I.	Most abundant white blood cell, and the main phagocytic cell of the blood.
B.	Eosinophil	II.	Least abundant white blood cell; releases histamine granules.
C.	Lymphocyte	III.	Resist infections and are associated with allergic reactions.
D.	Neutrophil	IV.	Blood cell that contains haemoglobin and transports oxygen.
E.	Basophil	V.	Specialized antibody-producing white blood cells.

(a) A – IV; B – III; C – V; D – I; E – II
(b) A – I; B – II, C – III; D – IV; E – V
(c) A – II; B – III; C – I; D – V; E – IV
(d) A – IV; B – I; C – II; D – III; E – V

78. Which of the following term (column-I) is correctly matched with its functions (column-II)?

	Column-I (Term)	**Column-II (Functions)**
(a)	Plasma	Straw coloured fluid that consists of suspended blood cells
(b)	Heart	Site where exchange of nutrients and gases occur
(c)	Capillary	A red colour fluid that provides food to the cells
(d)	Blood	Pumping station of the body

79. Match each area of the heart (column-I) with the structure (column-II) from which it receives blood.

	Column-I (Area of heart)		**Column-II (Receives blood from)**
A.	Right atrium	I.	Left atrium
B.	Right ventricle	II.	Vena cavae
C.	Left atrium	III.	Right atrium
D.	Left ventricle	IV.	Pulmonary veins

(a) A – II; B – III; C – IV; D – I
(b) A – I; B – II; C – III; D – IV
(c) A – IV; B – I; C – II; D – III
(d) A – III; B – IV; C – I; D – II

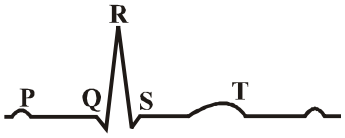
80. Match the column I with column II and choose the correct answer from the option given below.

	Column-I		**Column -II**
A.	Cardiac cycle	I.	72 / min
B.	Plasma	II.	120/80 mmHg
C.	Systolic/Diastolic	III.	0.8 seconds
D.	Haemoglobin	IV.	12 -16 gms in every 100 ml of blood
E.	Heart beat	V.	55 % of the blood

(a) A – I; B – II; C – III; D – IV; E – V
(b) A – III; B – V; C – II; D – IV; E – I
(c) A – III; B – I; C – V; D – II; E – IV
(d) A – V; B – IV; C – III; D – I; E – II

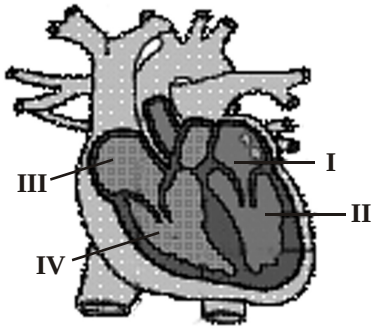
DIAGRAM TYPE QUESTIONS

81. Given below is the ECG of a normal human.
Which one of its components is correctly interpreted?



(a) Peak P and Peak R together - Systolic and diastolic blood pressures
(b) Peak P - Initiation of left atrial contraction only
(c) Complex QRS - One complete pulse
(d) Peak T - Initiation of total cardiac contraction

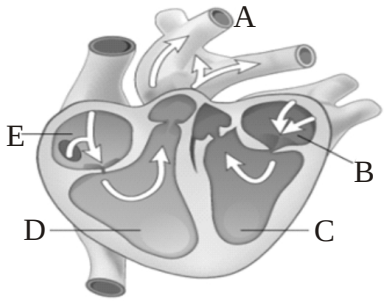
82. The given diagram represents human heart with four chambers labelled as I, II, III & IV?



Which labelled structure receives carbon dioxide rich blood from the body?

(a) I- Left atrium (b) II- Left ventricle
(c) III- Right atrium (d) IV- Right ventricle

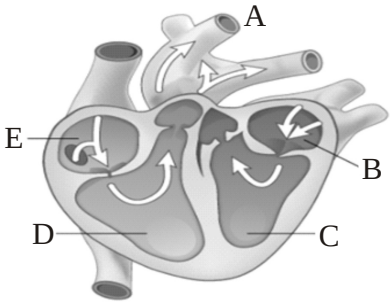
83. In the given diagram of human heart the mitral valve is located between which two parts of the heart?



(a) D and E (b) B and C
(c) D and C (d) E and B

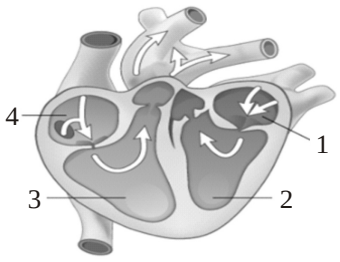
84. In the human heart, blood from the lungs enters the heart through the left atrium, pumps into the left ventricle, out the aorta and through the body, and then returns into the right atrium, pumps into the right ventricle and exits to the lungs.

Using the diagram, which set of letters (A, B, C, D, E) correctly represents the process describe above?



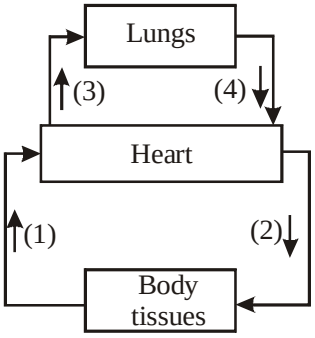
(a) E, D, A, B, C (b) B, C, A, E, D
(c) C, D, A, B, E (d) D, C, A, E, B

85. Refer the given figure of human heart and identify the chamber (marked as 1, 2, 3 & 4) which receives most of the blood returning from the brain.



(a) I- Left atrium (b) II- Left ventricle
(c) III- Right ventricle (d) IV- Right atrium

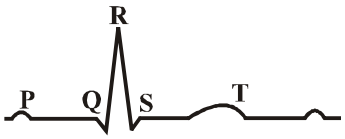
86. The given figure represents the pathway of blood throughout the body.



Identify the correct match of marked number 1, 2, 3 and 4.

(a) 1- Artery (b) 2- Pulmonary vein
(c) 3- Pulmonary artery (d) 4- Vein

87. The given figure represents diagrammatic presentation of an ECG. Each peak in the ECG is identified with a letter from P to T that corresponds to a specific electrical activity of the heart.



Which of the following letter shows the incorrect activity of heart?

(a) QRS - Depolarization of the ventricles
(b) R wave - Marks the beginning of the systole.
(c) P- Electrical excitation (or depolarization) of the atria
(d) T wave - Return of the ventricles from excited to normal state (repolarization).

CRITICAL THINKING TYPE QUESTIONS

88. What is true about leucocytes ?

(a) Their sudden fall in number is indication of blood cancer.
(b) These are produced in thymus.
(c) These are enucleated.
(d) These can squeeze out through the capillary walls.

89. Which is the correct route through which pulse making impulse travels in the heart?

(a) SA node → AV node → Bundle of His → Purkinje fibres
(b) AV node → Bundle of His → SA node → Purkinje fibres → heart muscles
(c) AV node → SA node → Purkinje fibres → Bundle of His → heart muscles
(d) SA node → Purkinje fibres → Bundle of His → AV node → heart muscles

90. If nerves of heart are cut, then heart will
(a) beat rhythmically (b) stop
(c) beat arhythmically (d) shrink

91. Which one of the following will be the cardiac output (in litres per minute) of a heart that has a stroke volume of 0.07 litres and is beating at a rate of 90 per minute?
(a) 63.30 (b) 63.00
(c) 00. 63 (d) 06.30

92. The blood returning to the heart through pulmonary vein has more
(a) RBC (b) haemoglobin
(c) oxygen (d) nutrient

93. First heart sound (LUBB) coincides with which wave of ECG?
(a) R-wave (b) T-wave
(c) P-wave (d) Q-wave

94. What happens when the pacemaker becomes non-functional?
(a) Only the auricles will contract rhythmically.
(b) The cardiac muslces do not contract in a coordinated manner rhythmically.
(c) Only ventricles will contract rhythmically.
(d) Auricles and ventricles contract simultaneously.

95. Maximum amount of oxygen is lost from the blood in the
(a) capillaries surrounding the tissue cells.
(b) arteries of the body.
(c) capillaries surrounding the alveoli.
(d) left auricle of the heart.

96. A drop of each of the following, is placed separately on four slides. Which of them will not coagulate?
(a) Whole blood from pulmonary vein
(b) Blood plasma
(c) Blood serum
(d) Sample from the thoracic duct of lymphatic system

97. If due to some injury, the chordae tendinae of the tricuspid valve of the human heart is partially non-functional, what will be the immediate effect?
(a) The flow of blood into the pulmonary artery will be reduced.
(b) The flow of blood into the aorta will be slowed down.
(c) The 'pacemaker' will stop working.
(d) The blood will tend to flow back into the left atrium.

98. Which of the following set of events can occur simultaneously?
(a) Auricular depolarization, ventricular depolarization, auricular systole.
(b) Ventricular depolarization, auricular systole, ventricular diastole.
(c) Auricular depolarization, ventricular repolarization, auricular diastole.
(d) Auricular depolarizaion, ventricular diastole, auricular systole.

99. If a person is loosing blood continuously due to injury then what will be the effect on his pulse and BP initially?
(a) Pulse and BP both will fall.
(b) Pulse will fall and BP will rise.
(c) Both pulse and BP will rise.
(d) Pulse will rise and BP will fall.

100. During systemic circulation, blood leaves the ___(i)____ and _____(ii)_____.
(a) (i)- left ventricle, (ii)- goes directly to the aorta
(b) (i)- right ventricle, (ii)- goes directly to the aorta
(c) (i)- right ventricle, (ii)- moves to the lungs.
(d) (i)- left ventricle, (ii)- moves to the lungs

101. In normal human blood pressure, what does the "120" represent?
(a) The maximum pressure that can be sustained by the arteries before bursting.
(b) The lowest pressure in the arteries that will keep someone from fainting when they stand up.
(c) The highest ideal arterial pressure for someone at rest.
(d) The pressure in the veins.

102. If a person had two-chambered heart (one atrium, and one ventricle) with the vena cava entering the atrium and the aorta leaving the ventricle then which of the following statement would be correct?
(a) No oxygen would reach the cells.
(b) No blood would reach the head and neck.
(c) The blood would be unable to carry food to the cells.
(d) There would be no blood circulation.

103. Sinus venosus is/are present in which of the following animals?
(i) Fishes (ii) Amphibians
(iii) Reptiles (iv) Birds
(v) Mammals
(a) (i) only (b) (i) and (iv) only
(c) (i), (ii) and (iii) (d) (i), (iii) and (iv)

104. In order for the blood to flow from right ventricle to left ventricle in mammalian heart, it must flow through
I. Right ventricle II. Pulmonary veins
III. Left atrium IV. Lungs
V. Pulmonary arteries
(a) I- V- IV- II- III (b) I- II- III- IV- V
(c) III- V- I- II- IV (d) III- II- I- IV-V

105. Which of the following is not correct for blood pressure?
(i) It is not affected by atherosclerosis.
(ii) It is typically lower in veins than in arteries.
(iii) Diastolic pressure is higher than systolic pressure.
(iv) It is usually refers to as venous pressure of the systemic circulation.
(a) (i) & (iii) (b) (i), (ii) & (iii)
(c) (ii) & (iii) (d) (i), (iii) & (iv)

106. Mother-foetus Rh blood type incompatibility disorder can occur if the mother is _____ and her foetus is ____.
(a) Rh positive; Rh positive
(b) Rh positive; Rh negative
(c) Rh negative; Rh positive
(d) Rh negative; Rh negative

107. "X" is a fibrous tissue of the membranous septum of the heart just above the septal cusp of the tricuspid valve. It separates the atrium and the ventricle of the same side. Identify "X".
(a) Sino atrial node
(b) Atrioventricular septum
(c) Atrioventricular node
(d) Interventricular septum

108. Which area allows the atria to completely empty as the ventricles fill with blood?
(a) A-V node (b) A-V bundle
(c) S-A node (d) Purkinje fibers

109. When a leopard runs after you, the increase in heart rate is probably due to the _____.
(a) hypothalamus
(b) sympathetic nerves
(c) increase in blood pressure
(d) medullary accelerator centre

110. The state of heart when it is not pumping blood effectively enough to meet the needs of the body is called _____.
(a) angina (b) cardiac arrest
(c) heart attack (d) heart failure