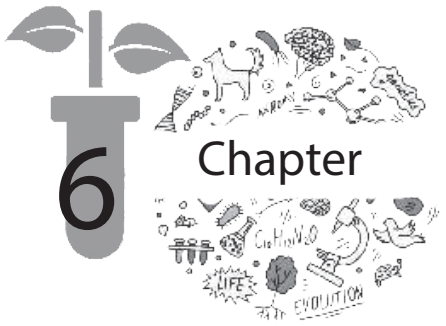


Chapter 6

Body Fluids And Circulation

MULTIPLE CHOICE QUESTIONS

1. Which of the following use water from their environment as circulating fluid?
(a) Sponges (b) Coelenterates
(c) a and b (d) Fishes

Topic 1	Blood-Plasma and Formed Elements

2. Match the following –

	Column I		Column II
I.	Basophils	A.	Phagocytes
II.	Neutrophils	B.	Secrete histamine, serotonin, heparin and involved in inflammatory response
III.	Monocytes	C.	Resist infections and are also involved in allergic reaction
IV.	Eosinophils	D.	Immunity
V.	Lympho cytes	E.	

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

3. Megakaryocytes produce-
(a) Leucocytes
(b) Lymphocytes
(c) Bone cells
(d) Blood platelets (thrombocytes)

4. Which of the following is cell fragments?
(a) Leucocytes (b) RBCs
(c) Blood platelets (d) None

5. 1 mm^3 blood has how many blood platelets?
(a) 150000 - 350000
(b) 1.5 million to 3.5 million
(c) 1500-3000
(d) 10 to 15 lacs

6. During blood clotting, platelets release –
(a) Thrombin
(b) Fibrinogen
(c) Prothrombin
(d) Thrombokinase and other blood clotting factor

7. Find the correct descending order of percentage proportion of leucocytes in human blood.
(a) Neutrophils → Basophils → Lymphocytes → Eosinophils → Monocytes
(b) Neutrophils → Monocytes → Lymphocytes → Eosinophils → Basophils
(c) Neutrophils →Lymphocytes→ Monocytes → Eosinophils → Basophils
(d) Neutrophils → Eosinophils → Basophils → Lymphocytes → Monocytes

8. Assertion – A physician might order a white cell count for a patient with symptoms of an infection.
Reason - An increase in the number of white blood cells (leukocytes) may indicate that the person is combating an infection.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.

(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

9. Blood, a special type of connective tissue-
(a) consists of a fluid matrix (Plasma)
(b) has formed elements
(c) is the most commonly used body fluid by most of the higher organisms
(d) all

10. Plasma is a straw coloured, viscous fluid constituting nearly ____ % of blood.
(a) 55 (b) 45
(c) 90 (d) 10

11. The amount of water present in blood plasma is –
(a) 99% (b) 90-92%
(c) 10% (d) 55%

12. I. Proteins contribute 6 - 8% of the blood plasma
II. Plasma contains very high amount of minerals
Ill. Plasma without the clotting factors is called serum
IV. Glucose, amino acids, lipids, etc., are also present in the plasma as they are always in transit in the body. –
(a) All are correct
(b) Only II is false
(c) Only I, III, IV is correct
(d) All are false

13. Match List I with List II and select the correct option.

	List I (Plasma protein)		**List II (Functions)**
I.	Fibrinogen	A.	Defense mechanism
II.	Globulins	B.	Osmotic balance
Ill.	Albumins	C.	Coagulation of blood

(a) I-C, II -A, III- B
(b) I-A, II - C, III- B
(c) I-C, II - B, III -A
(d) l-B, II-A, III-C

14. Formed elements of blood include –
(a) RBC, WBC and blood platelets
(b) All solutes present in blood
(c) Proteins present in blood
(d) All minerals (elements)

15. Which of the following statements is false?
(a) Erythrocytes/RBC are the least abundant of all the cells in blood.
(b) The number of RBCs in adult man per mm^3 of blood is 5 million to 5.5 million.
(c) RBCs are formed in the red bone marrow in the adults.
(d) RBCs are enucleate in most of the mammals.

16. Life span of human RBC is –
(a) 120 hours (b) 120 month
(c) 120 days (d) 102 days

17. What is the amount of haemoglobin present in 100 ml blood of human blood?
(a) 45g (b) 18-20g
(c) 12-16g (d) 10 -12g

18. Mammalian RBCs are in shape-
(a) Oval (b) Biconvex
(c) biconcave (d) Sickle-like

19. All of the following statement are correct about WBCs except –
(a) They are nucleate and least constancy in shape
(b) They are lesser in number (6000 – 8000 per mm^3 blood)
(c) They are generally short-lived
(d) They help in blood clotting

20. All of the following are granulocytes, except-
(a) Neutrophils
(b) Eosinophils
(c) Basophils only
(d) Lymphocytes and monocytes

Topic 2 Body Fluids and Circulation

21. Match list I with list II correctly –

	List I (Types of leucocytes/ WBCs)		List II (Their% (of total WBC)
I.	Neutrophils	A.	20 - 25
II.	Basophils	B.	2 - 3
Ill.	Monocytes	C.	6 - 8
IV.	Eosinophils	D.	0.5 - 1
V.	Lymphocytes	E.	60 - 65

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

Topic 3 Blood Groups

22. ABO blood grouping based on the presence or absence of surface antigens is of how many types?
(a) 2 (b) 3
(c) 6 (d) 12

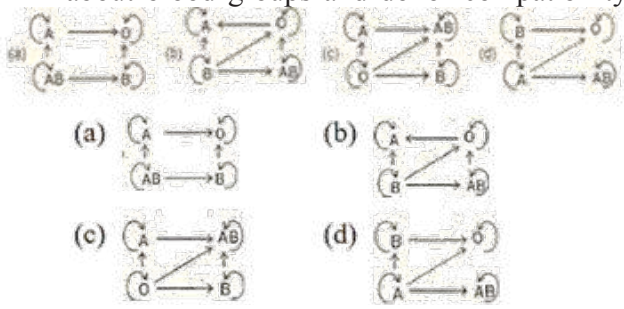
23. Fill up gaps given below in the table-

Blood group	Antigens on RBCs	Antibody in Plasma	Donor groups
A	A	Anti- B	A,O
B	B	Anti-A	B,O
AB	AB	II	A,B,ABO
O	I	III	IV

	I	II	III	IV
(a)	Nil	Nil	Nil	O
(b)	Nil	Nil	Anti-A,B	AB
(c)	Nil	Anti-A,B	Nil	O
(d)	Nil	Nil	Anti-A,B	O

24. Which of the following blood groups is universal donor and universal acceptors respectively?
(a) AB, O (b) O, AB
(c) AB, A (d) A, AB

25. Which of the following representations is correct about blood groups and donor compatibility?



(a)
(b)
(c)
(d)

26. Rh factor is concerned with blood grouping. It derives its name from-
(a) Man (b) Chimpanzee
(c) Monkey (d) Rat

27. Rh factor is responsible for-
(a) Sickle cell anemia
(b) Erythroblastosis foetalis
(c) AIDS
(d) Turner syndrome

28. In developing foetus, erythroblastosis foetalis is caused by-
(a) Haemolysis
(b) Clumping of RBCs
(c) Failure of blood clotting
(d) Phagocytosis by WBC.

29. In erythroblastosis foetalis, which of the following factors passes through placenta into foetus?
(a) Rh antigens (b) Rh antibodies
(c) Agglutinins (d) ABO antibodies

30. A doctor suggested to a couple not to have more than one child because of –
(a) Rh+ male and Rh- female
(b) Rh- male and Rh+ female
(c) Rh- male and Rh- female

(d) Rh+ male and Rh+ female

31. In case of emergency which blood group could be safely transfused?
(a) AB, Rh- (b) AB, Rh+
(c) O, Rh- (d) O, Rh+

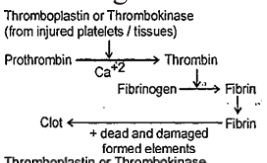
32. Which of the following is expected if husband is Rh+ and wife is Rh-?
(a) No problem with 1st pregnancy
(b) Problem would be expected with future pregnancies
(c) Both
(d) No problem could be expected in any pregnancy

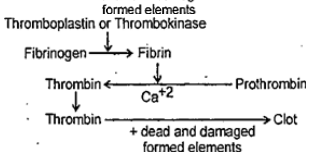
33. Which of the following statements is correct?
(a) Rh compatibility must be tested before pregnancy establishment and blood transfusion
(b) Rh antibodies can cross placenta
(c) At the time of 1st delivery some of Rh+ RB Cs from the baby (Rh+) mix with the mother's blood (Rh-) due to tear in placenta mother's blood and start preparing antibodies against the Rh antigens.
(d) All

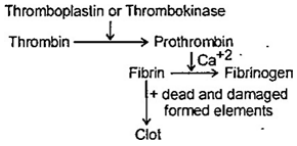
Topic 4 Coagulation of Blood

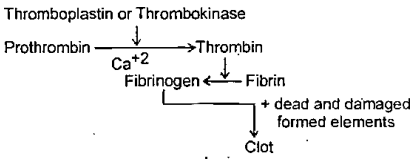
34. What is the correct order of these events?
1. Conversion of fibrinogen to fibrin
2. Clot retraction and leakage of serum
3. Thromboplastin formation
4. Conversion of prothrombin to thrombin
(a) 3,2,1,4 (b) 3,4,1,2
(c) 3,4,2,1 (d) 4,1,3,2

35. Which of the following statements are correct?
I. Ca^{+2} is necessary for blood coagulation
II. Coagulation in blood vessel is prevented during normal condition by heparin
III. Clotting of blood involves changes of fibrinogen to fibrin by thrombin
IV. Blood clotting involves cascading process involving a number n the active form always
(a) I, Ill, IV (b) II, IV
(c) I, II, Ill (d) Ill, IV

36. Which of the following pathways is correct for blood clotting?
(a)


(b)


(c)


(d)


Topic 5 Lymph (Tissue fluid)

37. Which of following statements is wrong about lymph?
I. Lymph is colourful as it has haemoglobin but no RBC
II. The fluid present in lymphatic system is called lymph
III. It contains specialized lymphocytes which are responsible for immunity of the body
IV. Lymph is an important carrier for nutrients and hormones
V. Fats are absorbed through lymph in the lacteals present in the intestinal villi
(a) Only I (b) III and IV
(c) II and III (d) Only IV

38. Which of the following statements is correct?
I. Lymphatic system collects tissue fluid/ interstitial fluid and drains it back to the major veins

II. Interstitial fluid (tissue fluid) and lymph have almost similar composition
III. Lymph and interstitial fluid have no larger proteins and RBC
IV. Exchange of nutrients and gases, etc. between the blood and cells always occurs through tissue fluid
V. Interstitial fluid has the same mineral distribution as that in plasma
VI. Lymph can be defined as blood minus RBC but has specialized lymphocytes

(a) All (b) Only III and IV
(c) V and VI (d) I, III, V

Topic 6 Circulatory Pathways

39. Open circulatory system is found in –
(a) Arthropods and Molluscs
(b) Annelids and Chordates
(c) Annelids and Arthropods
(d) Fishes and Molluscs

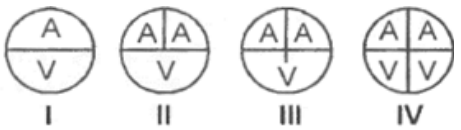
40. Closed circulatory system is found in –
(a) Arthropod and Chordates
(b) Molluscs and Chordates
(c) Amphibians and Molluscs
(d) Annelids and Chordates

41. In an open circulatory system –
(a) there is no heart
(b) there is no need of blood vessels
(c) there is no distinction between blood and tissue fluid
(d) there are no open spaces or sinuses in the body

42. Advantages of closed circulatory system over open circulatory system includes which of the following?
(a) Closed system can direct blood to specific tissues
(b) Exchange occurs more rapidly
(c) Closed circulatory system can support higher levels of metabolic activity
(d) All

43. Which of the following statements is wrong about the closed circulatory system?
(a) Blood remains within blood vessels and never comes in direct contact with the body cells
(b) In it flow of fluid can be more precisely regulated
(c) There is no blood capillary
(d) Blood flow is more rapid due to higher pressure

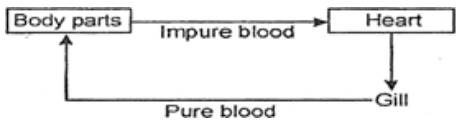
44. Following are figures of hearts in different animals:



A = Auricle
V = Ventricle
Identify with their characteristic hearts –

	I	II	III	IV
(a)	Fishes	Reptiles	All reptiles	Birds, Mammals
(b)	Fishes	Birds	Reptiles, birds	Mammal
(c)	Fishes	Amphibians	Reptiles	Crocodiles, Birds, Mammals
(d)	Fishes	Crocodiles	Amphibians, Reptiles	Birds, Mammals

45. In fishes, the blood circulation is represented as -



The above flow of blood indicates it is a
(a) Double circulation
(b) Single circulation
(c) Incomplete single circulation
(d) Incomplete double circulation

46. Incomplete double circulation is found in which of the following animals?
(a) Birds
(b) Mammals

(c) Birds and Mammals
(d) Amphibians and Reptiles

Topic 7 Human Circulatory System

47. Which of the following statements is not true?
(a) Heart is ectodermal in origin
(b) In human beings heart is situated in the thoracic cavity, in between the two lungs slightly tilted to the left
(c) Human heart has the size of a clenched fist.
(d) Double wall membranous bag (pericardium) with pericardial fluid protects heart

48. Which of the following is correct about human heart?
(a) The volume of both atria> the volume of both ventricles
(b) The volume of both ventricle> the volume of both atria
(c) The volume of both atria = the volume of both ventricles
(d) Ventricles are upper chambers and atria are lower chambers in our heart

49. Bicuspid valve / mitral valve is found between -
(a) Left atrium and left ventricle
(b) Right atrium and right ventricle
(c) Right atrium and left ventricle
(d) Left atrium and right ventricle

50. Tricuspid valve is present between the-
(a) Two atria
(b) Two ventricles
(c) Left atrium and left ventricle
(d) Right atrium and right ventricle

51. Chordae tendinae are found in –
(a) Joints
(b) Atria of heart
(c) Ventricles of heart
(d) Ventricles of brain

52. Ventricles are thick-walled as compared to atrium because -
(a) It is to receive blood from atria
(b) It is present on the posterior side
(c) It is to pump blood
(d) None

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

54. Match the following.

	Column I		**Column II**
A.	Superior vena cava	p.	carries deoxygenated blood to lungs
B.	Inferior vena cava	q.	carries oxygenated blood from lungs
C.	Pulmonary artery	r.	brings deoxygenated blood from lower part of body to right atrium
D.	Pulmonary vein	s.	bring deoxygenated blood from upper part of body to right atrium

(a) A - q, B - s, C - r, D - p
(b) A - s, B - p, C - q, D - r
(c) A- s, B - r, C - p, D - q
(d) A - s, B - p, C - r, D – q

55. Origin of heart beat and its conduction is represented by -
(a) SA-node → Purkinje fibres → AV-node→ Bundle of His
(b) AV-node→ Bundle of His→ SAnode→ Purkinje fibres
(c) Purkinje fibres→ AV-node→ SAnode→ Bundle of His
(d) SA-node→ AV-node→ Bundle of His→ Purkinje fibres

56. 'Heart of heart' is -
(a) SA-node (b) AV-node
(c) Bundle of His (d) Purkinje fibres

57. SA node is located in –
(a) Upper lateral wall of left atrium
(b) Lower lateral wall of left atrium

(c) Lower lateral wall of right atrium
(d) Upper lateral wall of right atrium

58. SA node is called pace maker of the heart. Why?
(a) It can change contractile activity generated by AV node
(b) It delays the transmission of impulse between the atria and ventricles
(c) It gets stimulated when it receives neural signal
(d) It initiates and maintains the rhythmic contractile activity of heart

59. Sino-atrial node (SAN) can generate impulses -
(a) 70 - 75 min-1 (b) 50 - 55 min-1
(c) 35 - 40 min-1 (d) 100-150 min-1

60. The impulse of heart beat originate from –
(a) SAN (c) AVN
(c) Vagus nerve (d) Cardiac nerve

61. Rate of heart is determined by-
(a) SAN (b) AVN
(c) Purkinje fibres (d) Bundle of His

62. Bundle of His is a group of-
(a) Ganglia (b) Nerve fibres
(c) Muscular fibres (d) Connective tissue

63. Bundle of His / AV-bundle is found in –
(a) Right auricle
(b) Left auricle
(c) Bone
(d) lnterventricular septum

64. Atria-ventricular node (AVN) is situated in
(a) Lower left corner of left auricle, close to AV-septum
(b) Lower left corner of right auricle, close to AV-septum
(c) Upper left corner of right auricle, close to AV-septum
(d) Upper left corner of left auricle, close to AV-septum

65. Purkinje fibres are present in -
(a) Left auricle
(b) Right auricle
(c) Ventricular myocardium
(d) SAN

66. The chordae tendinae-
(a) Close the AV-valves
(b) Prevent the AV-valves flaps from everting
(c) Open semilunar valves
(d) Are present in auricles

67. Which of the following correctly traces the electrical impulses that trigger each heart beat?
(a) Pacemaker → AV node→ Atria → Ventricles
(b) Pacemaker →Atria→ AV node → Ventricles
(c) AV node →Pacemaker→ Auricles →Ventricles
(d) Ventricle→ Pacemaker→ AV node→ Auricle

68. An atrioventricular valve prevents the back flow or leakage of blood from –
(a) the right ventricle into the right atrium
(b) the left atrium into the left ventricle
(c) the aorta into the left ventricle
(d) the pulmonary vein into the right atrium

69. How many double circulations are normally completed by the human heart in one minute?
(a) 8 (b) 16
(c) 36 (d) 72

70. Assertion- If you trace the path of a molecule of carbon dioxide that starts in an arteriole in the right thumb and leaves the body in exhaled air, the minimum number of capillary beds the molecule encountered is 2.

Reason- The molecule of carbon dioxide would need to enter a capillary bed in the thumb before returning to the right atrium and ventricle, then travel to the lung and enter a capillary from which it would diffuse into an alveolus and be available to be exhaled.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

Topic 8 Cardiac Cycle

71. The duration of cardiac cycle in a normal man is -
(a) 0.8 seconds (b) 80 seconds
(c) 60 seconds (d) 72 seconds

72. During systole of heart -
(a) only atria contract
(b) only ventricles contract
(c) Auricles and ventricles contract separately
(d) Auricles and ventricles contract simultaneously

73. During ventricular systole –
(a) Oxygenated blood is pumped into the aorta and deoxygenated blood is pumped into the pulmonary artery
(b) Oxygenated blood is pumped into the pulmonary artery and deoxygenated blood is pumped into the artery
(c) Oxygenated blood is pumped into aorta and deoxygenated blood is pumped into pulmonary vein
(d) Oxygenated blood is pumped into pulmonary vein and deoxygenated blood is pumped into pulmonary artery

74. Contraction of right ventricle pumps blood into-
(a) Dorsal aorta
(b) Pulmonary vein
(c) Coronary artery
(d) Pulmonary artery

75. When ventricular systole occurs –
(a) Auricular diastole coincides
(b) Tricuspid and bicuspid valves close
(c) Semilunar valves guarding pulmonary artery and aorta are forced to open
(d) All the above

76. During cardiac cycle about _____ % of ventricular filling occurs prior to atrial contraction. _____ % ventricular filling occurs due to atrial contraction–
(a) 50, 50 (b) 70, 30
(c) 30, 70 (d) 10, 90

77. Which of the following events do not occur during joint diastole?
I. All 4 chambers of heart are in relaxed state
II. Tricuspid and bicuspid valves open
III. Action potential is conducted from SAN to AVN
IV. Blood from the pulmonary veins and vena cava flows into the left and right ventricles respectively through the left and right atria
V. The semilunar valves are closed
(a) Only V (b) Only III
(c) Only IV (d) Only I and II

78. Cardiac output is determined by –
(a) Heart rate (b) Stroke volume
(c) Blood flow (d) Both a and b

79. The amount of blood to be pumped out by each ventricle/minute is-
(a) Stroke volume (b) Cardiac output
(c) Tidal volume (d) Residual volume

80. During cardiac cycle each ventricle pumps out about 70 ml of blood which is called -
(a) Stroke volume (b) Cardiac output
(c) Tidal volume (d) Residual volume

81. A red blood cell, entering the right side of the heart passes by through the following structures-
1. Atrioventricular valves
2. Semi-lunar valves
3. Right atrium
4. Right ventricle
5. SAN
(a) 2→3→1→4→5 (b) 3→1→5→2→4
(c) 3→5→1→2→4 (d) 5→3→1→4→2

82. Cardiac output is –
(a) Stroke volume (SV) × Heart rate (HR) = 5L/ min
(b) SV × HR= 500 ml
(c) SV × HR= 72 ml/min
(d) SV × HR= 70 ml/min

83. Which of the following statement is not true?
(a) Cardiac output of an athlete is much higher than that of an ordinary man
(b) In each minute a single cardiac cycle is performed
(c) Cardiac sounds are of clinical diagnostic significances
(d) Cardiac cycle includes auricular systole, ventricular systole and joint diastole/ complete diastole

84. First cardiac sound (lub) is associated with -
(a) Closure of tricuspid and bicuspid valves
(b) Opening of tricuspid and bicuspid valves
(c) Closure of semilunar valves
(d) Opening of semi lunar valves

85. Which of the following statement is wrong for second cardiac sound?
(a) It is heard as dup
(b) It is produced due to closure of semilunar valves
(c) It is clinically significant
(d) It is clinically non-significant

86. Assertion - The AV node delays the electrical impulse moving from the SA node and the atria to the ventricles.

Reason- The delay allows the atria to empty completely, filling ventricles fully before they contract.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

87. Assertion - After exercising regularly for several months, our resting heart rate decreases, but our cardiac output at rest is unchanged.

Reason- The heart, like any other muscle, becomes stronger through regular exercise. The stronger heart would have a lesser stroke volume, which would allow for the decrease in heart rate.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

Topic 9 Electrocardiograph (ECG)

88. Electrocardiogram is a measure of-
(a) Heart rate
(b) Ventricular contraction
(c) Volume of blood pumped
(d) Electrical activity of heart

89. Which of the following is a false statement?
(a) ECG is of a great clinical significance
(b) Electrocardiograph is the recording of electrical changes during the cardiac cycle
(c) To obtain a standard ECG, a patient is connected to the machine with 3 electrical electrodes (one to each wrist and to the left ankle)
(d) Normal activities of the heart are regulated intrinsically

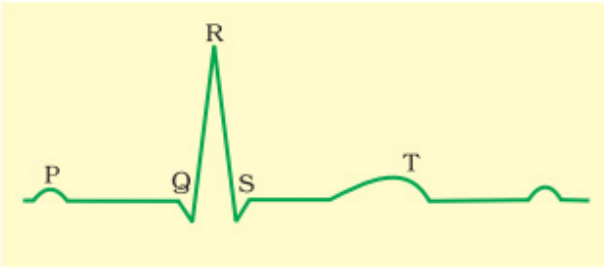
90. P-wave represents -
(a) Depolarization of ventricles
(b) Repolarization of ventricle
(c) Repolarization of atria
(d) Depolarization of atria

91. QRS complex represents the -
(a) Depolarization of ventricles
(b) Repolarization of ventricles
(c) Repolarization of atria
(d) Depolarization of atria

92. T wave on an ECG represents –
(a) Depolarization of ventricles
(b) Repolarization of ventricle
(c) Repolarization of atria

(d) Depolarization of atria

93. The below figure is the diagrammatic representation of standard ECG.



	Column I		Column II
A.	P-wave	I.	Ventricular depolarization followed by ventricular contraction
B.	QRS Complex	II.	Atrial depolarization followed by systole of both atria
C.	T- wave	III.	Ventricular repolarization followed by ventricular relaxation

(a) A-I, B-II, C-III
(b) A-III, B-II, C-I
(c) A-II, B-I, C-III
(d) A-II, B-III, C-I

Topic 10 Double Circulation

94. Which of the following options represents the pulmonary circulation in human being –

(a) Left Auricle $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Lungs $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Right ventricle

(b) Left Auricle $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Lungs $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Right Ventricle

(c) Right Ventricle $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Lungs $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Left Auricle

(d) Right Ventricle $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Lungs $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Left Auricle

95. Which of the following options represent correct systemic circulation in human being?

(a) Left Ventricle $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Tissues $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Right Ventricle

(b) Right Ventricle $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Tissues $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Right Auricle

(c) Left Ventricle $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Tissues $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Right Auricle

(d) Left Ventricle $\xrightarrow[\text{blood}]{\text{Oxygenated}}$ Tissues $\xrightarrow[\text{blood}]{\text{Deoxygenated}}$ Right Auricle

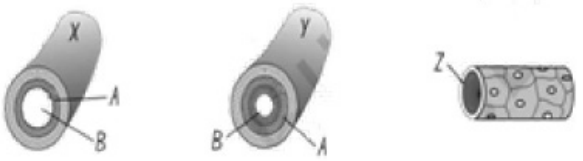
96. Note the following blood vessels –

A. Arteriole B. Capillary
C. Aorta D. Muscular artery
E. Vein F. Venule

Choose the correct path that lists the blood vessels in the order, blood passes through them as it leaves the heart, travels to tissue and returns to heart:

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

97. Identify X, Y and Z?



	X	Y	Z
(a)	Vein	Artery	Capillary
(b)	Capillary	Artery	Vein
(c)	Artery	Capillary	Vein
(d)	Vein	Capillary	Artery

98. Systemic circulation -

(a) Provides nutrient, O_2 and other essential substances to the tissues
(b) Takes CO_2 and other harmful substances away for elimination
(c) Both a and b
(d) Carries blood from heart to lungs

99. The blood circulation which starts and ends into capillaries is -

(a) Portal circulation
(b) Renal circulation
(c) Hepatic circulation
(d) Lymphatic circulation

100. Vascular connection between the digestive tracts and liver is called –

(a) Hepatic circulation
(b) Hepatic-portal system
(c) Both a and b
(d) Hepatic sinusoid

101. The hepatic-portal vein carries blood from to the ____ before it is delivered to the systemic circulation.
(a) Liver, intestine
(b) Pancreas, intestine
(c) Intestine, liver
(d) Hepatic artery, hepatic vein

102. A special coronary system of blood vessels present in our body exclusively for the circulation of blood to and from the-
(a) Corneocytes
(b) Cornea
(c) Cori cycle
(d) Heart/Cardiac musculature

103. Assertion- The heart of a normally developing human fetus has a hole between the left and right atria. In some cases, this hole does not close completely before birth. If the hole weren't surgically corrected, the O_2 content would be abnormally low.

Reason- In this case, some oxygen depleted blood returned to the right atrium from the systemic circuit would mix with the oxygen rich blood in the left atrium.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

104. Assertion – There is low velocity of blood flow in the capillaries.

Reason – There is large total crosssectional area of the capillaries.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

Topic 11 | Regulation of Cardiac Activity

105. Cardiac centre lies in -
(a) Medulla oblongata
(b) Pons
(c) Cerebrum
(d) Epithalamus

106. Cardiac centre can moderate. the cardiac functions through -
(a) Somatic neural system
(b) Parasympathetic nervous system only
(c) Autonomic nervous system (ANS)
(d) Sympathetic nervous system only

107. Neural signal through the sympathetic nerve (part of ANS) increases cardiac output because of-
(a) Increasing the rate of heart beat
(b) Increasing the strength of ventricular contraction
(c) Both a and b
(d) Increasing the stimulation of vagus nerve

108. Parasympathetic neural signal decreases cardiac output by -
(a) Decreasing the rate of heart beat
(b) Decreasing the speed conduction of action potential
(c) Both (a) and (b)
(d) Increasing adrenal medulla hormones secretion

109. Heart beat increases -
(a) On stimulation of sympathetic nerves
(b) On stimulation of vagus nerve (para sympathetic nerve)
(c) By adrenaline secreted by adrenal medulla
(d) Both (a) and (c)

Topic 12 | Disorders of Circulatory System

110. In adult, normal blood pressure is –
(a) 80/120 mmHg (b) 100/80 mmHg

(c) 120/80 mmHg (d) 100/120 mmHg

111. Normal BP= 120 / 80 mmHg in an adult. In this measurement 120 mmHg is the ____ pressure and 80 mmHg is _____ pressure-
(a) Diastolic, systolic
(b) Systolic, diastolic
(c) Pulse, diastolic
(d) Pulse, systolic

112. Which one indicates B.P or hypertension?
(a) 120/80 mmHg
(b) 80/120 mmHg
(c) 140/90 mmHg or higher
(d) 40/60 mm Hg

113. Match the Column I with Column II –

	Column I		Column II
A.	Heart failure	I.	Heart muscle is suddenly damaged by an inadequate blood supply
B.	Cardiac arrest	II.	Chest pain due to inadequate O_2 reaching the heart muscles
C.	Heart Attack	III.	Atherosclerosis
D.	Coronary Artery disease (CAD)	IV	Heart not pumping blood effectively enough to meet the needs of the body
E.	Angina pectoris	V.	Heart stops beating

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

114. It is often referred as atherosclerosis, affects the blood vessels that supply blood to the heart muscles. It is caused by deposition of Ca, fat, cholesterol and fibrous tissues making the lumen of arteries narrow.

The above facts are related to-
(a) CAD (b) SCIO
(c) Blue baby (d) Heart arrest

115. Assertion – Nitroglycerin relieves chest pain caused by narrowing of the cardiac arteries.

Reason – The chest pain results from inadequate blood flow in coronary arteries. Vasodilation promoted by nitric oxide from nitroglycerin increases blood flow, providing the heart muscle with additional oxygen and thus relieving the pain.
(a) Both assertion and reason are true and reason is correct explanation of assertion.
(b) Both assertion and reason are true but reason is not correct explanation of assertion.
(c) Assertion is true but reason is false.

111. (b) 112. (c) 113. (b) 114. (a) 115. (a)