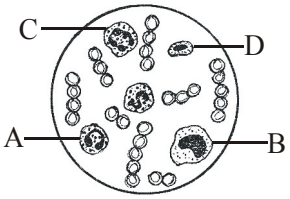
BODY FLUIDS AND CIRCULATION

1. Study the given figure and identify the cells labelled as A, B, C and D :-



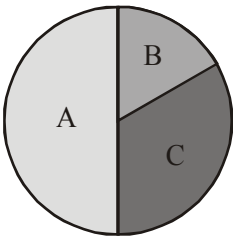
(1) A - Eosinophil, B - Erythrocyte
C - Neutrophil, D - Basophil

(2) A - Eosinophil, B - Lymphocyte
C - Neutrophil, D - Monocyte

(3) A - Erythrocyte, B - Basophil
C - Neutrophil, D - Lymphocyte

(4) A - Eosinophil, B - Monocyte
C - Neutrophil, D - Lymphocyte

2. In the given figure the durations of the events of the cardiac cycle are given, Identify these events and select the correct option.

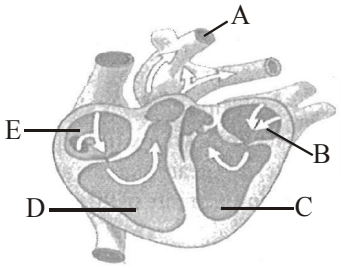


	A	B	C
(1)	Auricular systole	Joint diastole	Ventricular Systole
(2)	Ventricular systole	Joint diastole	Auricular systole
(3)	Ventricular systole	Auricular systole	Joint diastole
(4)	Joint diastole	Auricular systole	Ventricular systole

3. Which of the following term (column–I) is correctly matched with its functions (column–II):-

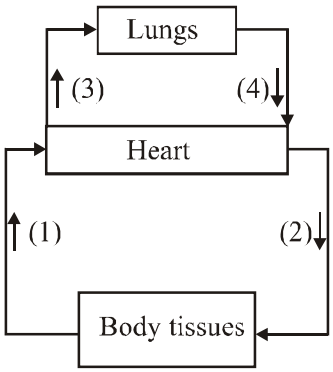
	Column-I (Term)	**Column-II (Functions)**
(1)	Plasma	Straw coloured fluid that consists of suspended blood cells
(2)	Heart	Site where exchanges of nutrients and gases are made
(3)	Capillary	A red colour fluid that provides food to the cells
(4)	Blood	Pumping station of the body

4. 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?



(1) E, D, A, B, C (2) B, C, A, E, D
(3) C, D, A, B, E (4) D, C, A, E, B

5. The given figure represents the pathway of blood through the body:-



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

(1) 1-Artery (2) 2-Pulumonary vein
(3) 3-Pulmonary artery (4) 4-Systemic Vein

6. During systemic circulation, blood leaves the (i) and (ii) :-

(1) (i)-left ventricle, (ii)-goes directly to the aorta

(2) (i)-right ventricle, (ii)-goes directly to the aorta

(3) (i)-right ventricle, (ii)-moves to the lungs.

(4) (i)-left ventricle, (ii)-moves to the lungs

7. 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 (VI) Left ventricle

(1) I-V-IV-II-III-VI (2) I-II-III-IV-V-VI

(3) III-V-I-II-IV-VI (4) III-II-I-IV-V-VI

8. "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":-

(1) Sino atrial node

(2) Atrioventricular septum

(3) Atrioventricular node

(4) Interventricular septum

9. When a leopard runs after you, the increase in heart rate is probably due to the _____:-

(1) hypothalamus

(2) parasympathetic nerves

(3) increase in blood pressure

(4) medullary accelerator centre

10. The characteristic of human erythrocyte are

(I) absence of nucleus

(II) formed in bone marrow

(III) possess healing properties

(IV) biconcave in shape

(V) help in antibody production

Choose the option with correct properties.

(1) III, IV and V

(2) I, II and III

(3) I, II and IV

(4) III, II and IV

11. Which of the following statement is incorrect about the lymph?

(I) Lymph is coloured as it has haemoglobin but no RBC

(II) The fluid present in the lymphatic system is called lymph

(III) It contains specialized lymphocytes which are responsible for the immunity of the body

(IV) Lymph is an important carrier for nutrients and hormones

(V) Fats are absorbed through the lymph in the lacteals present in the intestinal villi

Choose the correct option.

(1) II and III (2) Only I

(3) III and IV (4) Only IV

12. Cardiac activity could be moderated by the autonomous neural system. Tick the correct answer.

(1) The parasympathetic system stimulates heart rate and stroke volume

(2) The sympathetic system stimulates heart rate and stroke volume

(3) The parasympathetic system decreases the heart rate but increases the stroke volume

(4) The sympathetic system decreases the heart rate but increase stroke volume

13. Which of the following are erythropoietic organs?

(I) Liver

(II) Yalk Sac

(III) Spleen

(IV) White bone marrow

(V) Red bone marrow

Choose the correct option.

(1) All, except I

(2) All, except V

(3) All except III

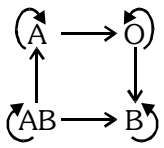
(4) All, except IV

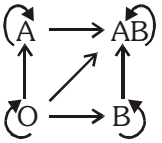
14. Match the following columns.

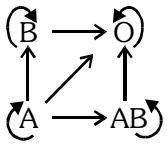
	Column-I		**Column-II**
A	Heart failure	i	Heart muscle is suddenly damaged by an inadequate blood supply.
B	Cardiac arrest	ii	Chest pain due to inadequate O_2 reaching the heart muscles
C	Heart attack	iii	Atherosclerosis
D	Coronary Artery Disease (CAD)	iv	Heart not pumping blood effectively enough to meet the needs of the body.
E	Angina pectoris	v	Heart stops beating

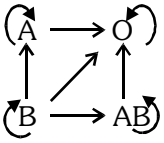
(1) A-iv; B-v; C-i; D-iii; E-ii
(2) A-v; B-iv; C-i; D-iii; E-ii
(3) A-iv; B-v; C-i; D-ii; E-iii
(4) A-v; B-iv; C-ii; D-iii; E-i

15. Which of the given option is correct about the blood groups and donor compatibility?

(1) 

(2) 

(3) 

(4) 

16. Which of the following events occur during joint diastole?
(I) All four-chambers are in relaxed state
(II) Tricuspid and bicuspid are open
(III) Semilunar valves are closed
(IV) Blood from the pulmonary veins and vena cava flows into the left and right ventricles, respectively through the left and right atria
The **correct** option :-
(1) Only I
(2) Only III
(3) Only II and IV
(4) All of these

17. Which of the following sentences is correct?
(I) ECG is of great clinical significance
(II) Electrocardiograph is the recording to electrical changes during the cardiac cycle.
(III) To obtain a standard ECG, a patient is connected to the machine with three electrical electrodes (one to each wrist and to the left ankle)
(IV) Normal activities of the heart are regulated intrinsically
(V) Electrocardiogram is the electrical activity of heart
The option with correct statements is
(1) I, II, III and IV (2) I, III, IV and V
(3) II, III, IV and V (4) I, II, IV and V

18. Fill in the blanks :-
a. Simple organisms like sponges and coelenterates circulate __1__ from their surroundings through their body cavities to facilitate the cells to exchange of O_2, CO_2 nutrients and waste products.
b. More complex organisms use special fluids within their bodies to transport such materials. The __2__ is most commonly used body fluid by most of the higher organisms including humans for this purpose.
c. Another body fluid __3__ also helps in the transport of certain substances.
(1) 1–lymph, 2–water, 3–blood
(2) 3–lymph, 1–water, 2–blood
(3) 2–lymph, 3–water, 1–blood
(4) 2–lymph, 1–water, 3–blood

19. Match the columns I and II, and choose the correct combination from the option given :-

Column-I (WBCs)		Column-II (Function)	
a.	Eosinophils	1.	Involved in inflammatory reactions
b.	Basophils	2.	Allergic reactions
c.	Neutrophils	3.	Responsible for immune response
d.	Lymphocytes	4.	Phagocytic cells
e.	Erythrocytes	5.	Gas transport

(1) a–4, b–5, c–1, d–2, e–3
(2) a–2, b–1, c–4, d–3, e–5
(3) a–1, b–2, c–3, d–4, e–3
(4) a–2, b–1, c–4, d–3, e–4

20. Match the column I and II, and choose the correct combination from the options given :-

Column-I		Column-II	
a.	Eosinophils	1.	Coagulation
b.	RBC	2.	Universal Recipient
c.	AB group	3.	Resist infection
d.	Platelets	4.	Contraction of Heart
e.	Systole	5.	Gas transport

(1) a–3, b–5, c–2, d–1, e–4
(2) a–5, b–1, c–3, d–4, e–2
(3) a–3, b–1, c–2, d–5, e–4
(4) a–3, b–5, c–2, d–4, e–1

21. Read the following statements and find out the incorrect statements :-

a. Heart is situated in the thoracic cavity, is between the two lungs, slightly tilted to the right.
b. Heart has the size of a clenched fist.
c. Heart is protected by double walled membranous bag, pericardium, enclosed the pericardial fluid.
d. Human heart has four chambers, two relatively larger upper chambers called atria and two smaller lower chambers called ventricles.
e. A thick muscular wall called the inter-atrial septum separates the right and the left atria, whereas a thin-walled, the inter-ventricular septum, separates, the left and right ventricles.

(1) a, d and e (2) b, c and d
(3) b, c and e (4) a and d

22. Read the following statements and find out the incorrect statement :-

(1) The entire heart is made of cardiac muscles.
(2) A specialised cardiac musculature called the nodal tissue is also distributed in the heart.
(3) The walls of ventricles are much thicker than that of the atria.
(4) Single heart circuit occurs in whale.

23. Neural signals through parasympathetic neural signals (another component of ANS) can :-

a. Increase the heart beat rate
b. Decrease the heart beat rate
c. Increase the strength of ventricular contraction
d. Decrease the speed of conduction of action potential
e. Increase cardiac output
f. Decrease cardiac output

(1) b, c and e (2) a, d and f
(3) b, d and f (4) a, c and e

24. Blood pressure is also controlled by :-

(1) Thyroid gland (2) Adrenal gland
(3) Thymus gland (4) Parathyroid gland

ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1
Ans.	**4**	**4**	**1**	**2**	**3**	**1**	**1**	**2**	**4**	**3**	**2**	**2**	**4**	**1**	
Que.	16	17	18	19	20	21	22	23	24						
Ans.	**4**	**2**	**2**	**4**	**1**	**1**	**4**	**3**	**2**						