BIOLOGY

NEET & AIIMS

BODY FLUIDS AND CIRCULATION

Example

1. Name three plasma proteins.

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2. What is serum ?

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3. What is erythropoiesis ?

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4. What is globulins ?

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5. What is diapedesis ?

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6. What is leucocytosis ?

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7. What are sinuses ?

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8. How is lymph filtered ?

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9. What is Rh factor ?

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10. What is a clot or coagulum ?

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11. Cardiac Cycle

12. What is stroke volume ?

13. name the primary embryonic cell layer from which heart is derived.

14. What is heart rate ?

15. Why the exchange of materials between the blood and tissues occurs through capillaries ?

16. What is heart attack ?

17. Name the medullary hormones whch increase the heart beat during emergency.

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Try Yourself

1. Albumins help in

A. Defence mechanism of the body

B. Maintaining blood volume and pressure

C. Blood clotting

D. The formation of serum

Answer: B

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2. Carbonic anhydrase is playing an important role in transport of carbon dioxide in

A. Leucocytes

B. Thrmbocytes

C. Erythrocytes

D. Platelets

Answer: C

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3. _____ is known as the grveyard of RBCs.

A. Liver

B. Spleen

C. Pancreas

D. Bone marrow

Answer: B

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4. Which of the following statements in incorrect ?

A. The RBCs of camel-are oval and enucleated.

B. Blood clotting factors are present in plasma

C. Human RBCs lack nuclei but have mitochondria

D. In adults erythropoiesis occurs in the bone marrow

Answer: C

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5. The metal associated with haemoglobin is

A. Magnesium

B. Sodium

C. Iron

D. Copper

Answer: C

6. The life span of the erythrocytes in humans is about

A. 120 days

B. 150 days

C. 190 days

D. 180 days

Answer: A

7. In human blood, the oxygen carrier is

A. Carbonic anhydrase

B. Haemoglobin

C. Haemocyanin

D. Both (1) & (3)

Answer: B

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8. In most of the mammals, RBCs have

A. Nuclei

B. No nuclei

C. No mitrochondria

D. Both (2) & (3)

Answer: D

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9. An anti-clotting factor heparin, is produced by

A. Eosinophilis

B. Neutrophis

C. Basophils

D. Monocytes

Answer: C

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10. Heparin, histamine, and serotonin are secreted by

A. Agranulocytes

B. Erythrocytes

C. Thrombocytes

D. Basophils

Answer: D

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11. The most abundant WBCs are

A. Monocytes

B. Lymphocytes

C. Neutrophils

D. Eosinophils

Answer: C

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12. Which of the following cells is capable of engulfing foreign particles ?

A. Monocytes

B. Basophils

C. Eosinophils

D. Neutrophils

Answer: A

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13. The least abundant of the total WBCs are

A. Monocytes

B. Basophils

C. Eosinophils

D. Neutrophils

Answer: B

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14. Special cells in the bone marrow that produce thrombocytes are

A. B cells

B. T cells

C. Megakaryocytes

D. Monocytes

Answer: C

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15. ____ play an important role in blood clotting

A. Erythrocytes

B. Leucocytes

C. Thrombocytes

D. All of these

Answer: C

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16. Mark the blood cells which are nucleated in case of humans

A. Erythrocytes

B. Leucocytes

C. Blood platelets

D. Both (1) & (3)

Answer: B

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17. Open circulatory system in present in

A. Arthopods

B. Molluscs

C. Annelids

D. Both (1) & (2)

Answer: D

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18. Deoxygenated blood is pumped by the heart in

A. Reptiles

B. Birds

C. Mammals

D. Fishes

Answer: D

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19. Tissue fluid is ultimately returned to the

A. Excretory system

B. Cardiovascular system

C. Respiratory system

D. Digestive system

Answer: B

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20. From the intestinal villi, fats are absorbed by

A. Phagocytic cells

B. Blood capilaries

C. Lymph capillaries

D. Lymph nodes

Answer: C

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21. Incomplete double circulation is found in : —

A. Fishes

B. Amphibians

C. Reptiles

D. Both (2) & (3)

Answer: D

22. Which of the following statements in incorrect ?

A. Lymph nodes produce lymphocytes

B. The mineral distribution of both plasma and tissue fluid are similar

C. Thoracic duct drains the lymph into the left subclavian vein

D. The lymphatic capillaries and ducts are called lymphoid organs

Answer: D

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23. In complete double circulation

A. There is no mixing of oxygenated and deoxygenated blood

B. The left and right ventricles pump out oxygenated and deoxygenated blood, respectively

C. There are two separate circulatory pathways

D. All of these

Answer: D

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24. Different blood groups are due to

A. Specific antigens on the surface of WBCs

B. Specific antibodies on the surface of RBCs

C. Specific antigens on the surface of RBCs

D. Specific type of haemoglobin in RBCs

Answer: C

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25. Who got the Nobel Prize for the discovery of ECG?

A. Einthoven

B. Karl Landsteiner

C. William Harvey

D. Frederich Sanger

Answer: A

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26. If the T - wave of an ECG is flat, it indicates

A. Heart muscles are receiving insufficient oxygen

B. Enlargement of atria

C. Myocardial infarction

D. All of these

Answer: A

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27. In humans, the cardiac output is about

A. 6040 mL

B. 5040 mL

C. 2080 mL

D. 3080 mL

Answer: B

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28. The opening between the right atrium and the right ventricle is guarded by which valve ?

A. Tricuspid valve

B. Bicuspid valve

C. Mitral valve

D. Semilunar valve

Answer: A

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29. Oxygenated blood is carried by

A. Pulmonary vein

B. Pulmonary artery

C. Vena cava

D. Both (1) & (3)

Answer: A

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30. which one is the first heart sound ?

A. Lub' during closure of semilunar valves

B. Lub' during closure of atrioventricular valves

C. Dub' during closure of atrioventricular valves

D. Dub' during closure of semilunar valves

Answer: B

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31. All the four chambers of heart are in a relaxed state during

A. Atrial systole

B. Ventricular systole

C. Ventricular diastole

D. Joint diastole

Answer: D

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32. Semilunar valves close when

A. Ventricular pressure rises

B. Atrial pressure rises

C. Ventricular pressure falls

D. Atrial pressure falls

Answer: C

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33. ___supply/supplies oxygenated blood to heart musculature.

A. Coronary arteries

B. Carotid artery

C. Hepatic artery

D. Coronary sinus

Answer: A

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34. Cardiac activity is regulated by

A. Sympathetic nervous system

B. Parasympathetic nervous system

C. Adrenaline

D. All of these

Answer: D

35. Which of the following generates the action potential in the heart ?

A. Right atrium

B. SA node

C. Mitral valve

D. Chordae tendinae

Answer: B

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36. ___ is composed of just one cell layer.

A. Capillary

B. Arteriole

C. Venule

D. Vein

Answer: A

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37. Narrowing of lumen of atery due of deposition of fats is called

A. Angina pectoris

B. Cardiac arrest

C. Heart failure

D. Atherosclerosis

Answer: D

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38. Glucose is carried from digestive tract to liver by

A. Hepatic artery

B. Hepatic portal vein

C. Pulmonary vein

D. All of these

Answer: B

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39. Deoxygenated blood from wall of heart is carried by

A. Coronary sinus

B. Inferior vena cava

C. Superior vena cava

D. Pulmonary artery

Answer: A

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40. Which of the following represents systemic circulation ?

A. Left atrium $\rightarrow$ Lungs $\rightarrow$ Right atrium

B. Right atrium $\rightarrow$ Lungs $\rightarrow$ Right ventricle

C. Left ventricle $\rightarrow$ Body parts $\rightarrow$ Right atrium

D. Right ventricle $\rightarrow$ Body parts $\rightarrow$ left atrium

Answer: C

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Exercise

1. Component of blood responsible for producing antibodies is

A. Thrombocytes

B. Monocytes

C. Erythrocytes

D. Lymphocytes

Answer: D

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2. Serum is

A. Plasma without clotting factors

B. Blood without blood cells

C. Blood without clotting factors

D. Blood without RBC

Answer: A

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3. Which of the following leucocytes destroy foreign organisms entering the body?

a. Eosinophils, b. Basophils, c. neutrophils, d. Monocytes, e. Lymphocytes

A. Eosinophil

B. Basophil

C. Monocyte

D. Acidophil

Answer: C

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4. If 'A' antigen is present on RBCs then the blood group of a person is

A. A

B. B

C. AB

D. O

Answer: A

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5. Cell fragments of megakaryocytes yield

A. Neutrophil

B. Lymphocytes

C. Platelets

D. All of these

Answer: C

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6. Mark the odd one w.r.t. Characteristic features of human RBC

A. Biconcave

B. Circular

C. Oval

D. Non nucleated

Answer: C

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7. Which of the following is most abundant in blood.

A. RBC

B. Lymphocyte

C. Monocyte

D. Platelet

Answer: A

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8. Erythroblastosis foetalis occurs when a factor from mother passes into foetus through placenta

A. Rh antigen

B. Rh antibodies

C. Agglutinins

D. ABO antibodies

Answer: B

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9. Lymph

A. Transports oxygen to brain

B. Transports CO_2 to lungs

C. Returns interslitial fluid back to heart

D. Contain RBCs, leucocyte, and more protein as compared to blood

Answer: C

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10. For conversion of prothrombin into thrombin, which of the following is required

A. Fibrinogen

B. Vitamin K.

C. Proconvertin

D. Thrombokinase

Answer: D

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11. Cardiac output is

A. Volume of blood pumped by each ventricle in each cardiac cycle

B. Volume of blood pumped out by each ventricle per minute

C. 5 litres in a healthy individual

D. Both (2) & (3)

Answer: D

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12. Which of the following is mismatched ?

A. Lubb : First heart sound associated with closure of tricuspid and bicuspid valves

B. Cardiac output : Stroke volume multiplied by heart rate

C. Dub : Second heart sound, due to opening of semilunar valves

D. Duration of cardiac cycle : 0.8 seconds

Answer: C

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13. Atrial systole

A. Increases the flow of blood into the ventricles by 70 percent

B. is due to generation of action potential in AVN

C. Increases the flow fo blood into the ventricles by 30 percent

D. Coincides with ventricular systole

Answer: C

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14. Purkinje fibres arise from

A. Apex of ventricles

B. Middle of ventricles

C. Anterior part of atria

D. Posterior part of atria

Answer: A

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15. The opening between the right atrium and the right ventricle is guarded by which valve ?

A. Bicuspid valve

B. Mitral valve

C. Tricuspid valve

D. Both (2) & (3)

Answer: C

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16. Which of the following is known as natural pacemaker of the heart ?

A. Sinu atrial node

B. Atrio ventricular node

C. Bundle of His

D. Purkinje fibres

Answer: A

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17. All veins carry deoxygenated blood except

A. Renal atery

B. Hepatic vein

C. Hepatic portal vein

D. Pulmonary veins

Answer: D

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18. Pulmonary artery differs from pulmonary vein in having

A. Thick wall

B. Thin wall

C. Valves

D. Both (2) & (3)

Answer: A

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19. Papillary muscles occur in

A. Ventricles

B. Auricles

C. Atrioventricular valves

D. Pulmonary valves

Answer: A

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20. Origin of heart beat and its conduction is represented by

A. AV budle $\rightarrow$ Bundle of His $\rightarrow$ SA node $\rightarrow$ Purkinje fibres

B. SA node $\rightarrow$ Purkinje fibres $\rightarrow$ AV node $\rightarrow$ Bundle of His

C. Purkinje fibres $\rightarrow$ AV node $\rightarrow$ Bundle of His $\rightarrow$ SA node

D. SA node $\rightarrow$ AV node $\rightarrow$ Bundle of His $\rightarrow$ Purkinje fibres

Answer: D

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21. Rise in heart beat, increase in the cardiac output, blood pressure and blood sugar occurs during emergency, by the hormone

A. Aldosterone

B. Antidiuretic hormone

C. Epinephrine

D. Oxytocin

Answer: C

22. Decrease in the rate of heart beat, speed of conduction of action potential and thereby the cardiac output is under the control of

A. Neural signals through the sympathetic nerves

B. Neural signals through the parasymphathetic nerves

C. Adrenaline

D. ANS

Answer: B

23. Human heart is

A. Myogenic

B. Neurogenic

C. Venous

D. Both (1) & (2)

Answer: A

24. If we give an injection of acetylcholine to a person, rate of heart beat will

A. Increase

B. Decrease

C. Increases first then decrease

D. No effect on heart beat

Answer: B

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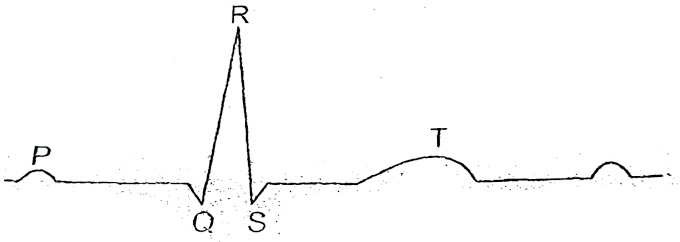
25. Given below is the ECG of a normal human. Which of its components is correctly interpreted below ?



A. Peak P and Peak R - Systolic and diastolic blood pressure

B. Peak P - Initiation of left atrial contraction only

C. Complex QRS - one Complete pulse

D. Peak T - Initiation of total cardiac contraction

Answer: C

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26. Which of the following wave in ECG represents depolarisation of the atria ?

A. P - wave

B. Q - wave

C. QRS wave

D. T - wave

Answer: A

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27. Which of the following wave in ECG marks the end of ventricular systole ?

A. P - wave

B. Q - wave

C. QRS wave

D. T - wave

Answer: D

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28. In ECG, ST segment is elevated in

A. Acute myocardial infarction

B. Myocardial ischaemia

C. Insufficient supply of oxygen to the heart muscles

D. Both (2) & (3)

Answer: A

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29. The main difference in the structure of arteries and veins is in

A. Tunica intima, made up of simple squamous epithelium

B. Tunica media

C. Tunica Externa

D. Tunica adventitia

Answer: B

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30. Which of the following system returns the blood from intestine and breaks into portal system of capillaries in the liver ?

A. Renal portal system

B. Hepatic porta system

C. Lymphatic system

D. Systemic circulation

Answer: B

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31. Artificial pacemaker is required when a person is sufering from

A. Arteriosclerosis

B. Athereosclerosis

C. Irregularity of heart beat

D. Hypertension

Answer: C

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32. When the heart is not pumping the blood effectively enough to meet the needs of the body, it is called

A. Heart failure

B. Cardiac arrest

C. Heart attack

D. Angina

Answer: A

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33. A symptom of acute chest pain when enough oxygen is not reaching the heart muscle is called

A. Heart attack

B. Angina

C. Cardiac arrest

D. Coronary artery disease

Answer: B

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34. What would happen if there is failure of receiving the atrial impulse by the ventricles or completely independent contraction of the atria and the ventricles ?

A - Ventricular escape

B - Stokes - Adams syndrome

C - Irregularity in heart rhythm

D - Arteriosclerosis

A. A only

B. A and B

C. A, B and C

D. A, B, C and D

Answer: C

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35. High blood pressure can potentially harm the vital organs like

A - Heart

B - Brain

C - Kidneys

D - Lungs

A. A and B only

B. B and C only

C. A, B and C

D. A, B, C and D

Answer: C

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36. If fat / cholestrol is deposited in the artery supplying the heart musculature it leads to

A. Atherosclerosis

B. Cardiac arrest

C. Heart failure

D. Varicose vein

Answer: A

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37. Which of the following statements is not true about blood pressure ?

A. Blood pressure is measured with an instrument called sphygmomanometer

B. If the blood pressure of an individual is 140/90 mm Hg or higher, it shows hypertension

C. The normal systolic pressure is 120 mm Hg and diastolic pressure is 80 mm Hg.

D. Hypertension is caused by vasodilation which results in increased resistance to blood flow

Answer: D

38. Difference between systolic and diastolic blood pressure is

A. Blood pressure

B. Pulse pressure

C. Cardiac output

D. Pulse

Answer: B

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39. Angina pectoris is a major symptom of

A. Myocardial infarction

B. Cyanosis

C. High blood pressure

D. Low blood pressure

Answer: A

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40. Murmur occurs due to defect in

A. AV node

B. SA node

C. Purkinje fibres

D. Heart valves

Answer: D

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Assignment Section A Objective Type Questions

1. Fluid exuding from the clotted blood is

A. Plasma with most of the formed elements

B. Plasma without clotting factors

C. Serum

D. Both (2) & (3)

Answer: D

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2. A reduction in the number of blood platelets is called

A. Thrombocytopenia

B. Haemophila

C. Anaemia

D. Hypertension

Answer: A

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3. Each haemoglobin molecule has

A. One heme group

B. Two heme groups

C. Three heme groups

D. Four heme groups

Answer: D

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4. In adults, erythropoiesis occurs in

A. Liver

B. Red bone marrow

C. Spleen

D. Yellow bone marrow

Answer: B

5. Granulocytes are formed in

A. Thymus

B. Bone marrow

C. Kidney

D. Liver

Answer: B

6. Immunity is provided by

A. Erythrocytes

B. Lymphocytes

C. Megakaryocytes

D. Thrombocytes

Answer: B

7. Diapedesis is the characteristic feature of

A. Monocytes

B. B - lymphocytes

C. T - lymphocytes

D. All of these

Answer: A

8. Which of the following are phagocytic in nature ?

A. Monocytes

B. Macrophages

C. Neutrophils

D. All of these

Answer: D

9. ___ are cell fragments rather than true cells

A. Erythrocytes

B. Granulocytes

C. Thrombocytes

D. Agranulocytes

Answer: C

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10. Which of the following formed element activates the plasma clotting factors ?

A. Erythrocytes

B. Monocytes

C. Lymphocytes

D. Thrombocytes

Answer: D

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11. Blood group AB has

A. No antigen

B. No antibody

C. Neither antigen nor antibody

D. Both antigen and antibody

Answer: B

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12. In ABO system of blood grouping, transfusion is not possible from

A. A to AB

B. B to AB

C. O to O

D. A to O

Answer: D

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13. Erythroblastosis foetalis can occur if

A. Mother is Rh -ve and foetus is Rh +ve

B. Both mother and foetus are Rh -ve

C. Mother is Rh +ve and foetus is Rh -ve

D. Both mother and foetus are Rh +ve

Answer: A

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14. Blood platelets release

A. Fibrinigens

B. Prothrombins

C. Hemoglobin

D. Thromboplastins

Answer: D

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15. Prothrombin that helps in clotting of blood, is present in

A. Blood plasma

B. Blood corpuscles

C. Blood platelets

D. Serum

Answer: A

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16. Prothrombin is a

A. Protein

B. Lipid

C. Nucleotide

D. Carbohydrate

Answer: A

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17. Which of the following prevent(s) blood clotting in uninjured blood vessels ?

A. Albumins

B. Histamine

C. Heparin

D. Globulins

Answer: C

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18. Lymph ultimately release the absorbed substances into

A. Lymphatic capillaries

B. Blood stream (veins)

C. Lymph node

D. Lymphatic duct

Answer: B

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19. Mixing of oxygenated and deoxygenated blood occurs in the heart of

A. Bird

B. Crocodile

C. Rabbit

D. Frog

Answer: D

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20. Human heart is derived from

A. Ectoderm

B. Mesoderm

C. Endoderm

D. Both (1) & (3)

Answer: B

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21. How many cardiac cycles are performed per minute in humans ?

A. 1

B. 12

C. 27

D. 72

Answer: D

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22. In humans, the volume of blood pumped out by each ventricle per minute is

A. 1040 mL

B. 5 L

C. 2.5 L

D. 1290 mL

Answer: B

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23. Oxygenated blood from the left ventricle enters into

A. Pulmonary artery

B. Aorta

C. Superior vena cava

D. Pulmonary trunk

Answer: B

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24. Contraction of right ventricle pumps blood into

A. Pulmonary vein

B. Pulmonary artery

C. Coronary sinus

D. Coronary artery

Answer: B

Watch Video Solution

25. How many double circulations are normally completed by the human heart in one minute

A. Eight

B. Sixteen

C. Thirty six

D. Seventy two

Answer: D

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26. Systematic circulation of oxygenated blood starts from

A. Right atrium

B. Left atrium

C. Left ventricle

D. Right ventricle

Answer: C

 Watch Video Solution

27. Amino acids are transported from the intestine to liver by

A. Hepatic artery

B. Hepatic portal vein

C. Pulmonary vein

D. Hepatic vein

Answer: B

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28. Coronary sinus carries ____ to the right atrium.

A. Interstitial fluid

B. Deoxygenated blood

C. Lymph

D. Oxygenated blood

Answer: B

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29. A special neural centre that can moderate the cardiac function is located in

A. Cerebrum

B. Pons

C. Medulla oblongata

D. Cerebellum

Answer: C

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30. The walls of capillaries are composed of endothelium which is

A. Cuboidal epithelium

B. Squamous epithelium

C. Columnar epithelium

D. Stratified epithelium

Answer: B

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31. Tunica externa is composed of

A. Endothelium

B. Connective tissue

C. Smooth muscles

D. Glycoproteins

Answer: B

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32. Which one of the following represents pulmonary circulation ?

A. Left atrium $\rightarrow$ Lungs $\rightarrow$ Right atrium

B. Left atrium $\rightarrow$ Lungs $\rightarrow$ Right ventricle

C. Right ventricle $\rightarrow$ Lungs $\rightarrow$ Left ventricle

D. Right ventricle $\rightarrow$ Lungs $\rightarrow$ Left atrium

Answer: D

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Assignment Section B Objective Type Questions

1. T-lymphocytes mature in

A. Bone marrow

B. Lymph nodes

C. Bursa of fabricius

D. Thymus

Answer: D

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2. The granulocyte to arrive first at the site of an infection is

A. Neutrophil

B. Eosinophil

C. Basophils

D. All of these

Answer: A

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3. A person with blood group O will have _____ antibody/antibodies in plasma.

A. anti-B

B. anti-A

C. nil

D. anti-A and anti-B

Answer: D

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4. Clotting of blood involves

A. Hemolysis of RBCs

B. Denaturation of albumins by thrombin

C. Inactivation of plasma clotting factors

D. Change of fibrinogen to fibrin by thrombin

Answer: D

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5. Lymph nodes

A. Filter the lymph

B. Contain phagocytic cells

C. Responsible for lymphocyte activation

D. All of these

Answer: D

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6. Read the following :

a. Lymph absorbs and transports fat from the intestine .

b. Lymph nodes produce fibrinogen.

c. Lymphatic capillaries present in the intestinal villi are known as lacteals.

d. Lymph transports oxygen only.

Which of these statements are true ?

A. a, c

B. b, d

C. c, d

D. a, b

Answer: A

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7. Blood pumped by the heart passes into sinuses in

A. Fishes

B. Earthworms

C. Insects

D. Birds

Answer: C

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8. A patch of nodal tissue responsible for initiating the rhythmic contractile activity of heart is present in

A. Lower left corner of the left ventricle

B. Upper right corner of the right atrium

C. Lower left corner of the right ventricle

D. Upper left corner of the left atrium

Answer: B

9. Murmur occurs due to defect in

A. Heart valves

B. SA node

C. Bundle of His

D. Purkinje fibres

Answer: A

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10. Repolarisation of the ventricles is represented by

A. P-wave

B. QRS-wave

C. T-wave

D. Both P and T-wave

Answer: C

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11. The strength of ventricular contraction increases when SAN is stimulated by

A. Vagus nerve

B. Parasympathetic nerve

C. Sympathetic nerve

D. All of these

Answer: C

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12. Match I with column II

Column I	Column II
$a.$ Capillaries	(i) Valves
$b.$ Veins	(ii) Smooth muscles
$c.$ Aorta	(iii) Narrowest blood vessels
$d.$ Tunica media	(iv) Elastic artery

Select the alternative which shows the correct matching.

A. a(iv), B(iii), c(i), D(ii)

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

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

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

Answer: C

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13. Complete stoppage of heart beat is known as

A. Cardiac arrest

B. Myocardial infarction

C. Angina pectoris

D. Heart failure

Answer: A

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14. Which of the following diseases is also known as artherosclerosis ?

A. hypertension

B. Angina pectoris

C. Heart attack

D. Coronary artery disease (CAD)

Answer: D

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15. There is no capillary system in case of most of the invertebrates except

A. Crustaceans

B. Cephalopods

C. Insects

D. Gastropods

Answer: B

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16. Time interval between the closure of semilunar valve and closure of AV valve is

A. 0.3 s

B. 0.5 s

C. 0.1 s

D. 0.7 s

Answer: B

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17. If one litre of blood is drawn out of 5 litres from the body of man, how much blood would be left by the next day ?

A. 5 litres

B. 4.5 litres

C. 4 litres

D. 3 litres

Answer: A

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18. RBC placed in distilled wate will

A. Burst

B. Increase in number

C. Shrink

D. Stick to each other

Answer: A

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19. Universal recipient blood group : —

A. A^+

B. AB^+

C. B^+

D. O^+

Answer: B

Watch Video Solution

20. A person with antigen A in the RBC and antibody B in plasma belongs to the blood group :

A. A

B. B

C. O

D. AB

Answer: A

21. The two aurticles are demarcated extrenally from the ventricle by an irregular groove called

A. Inter - auricular septum

B. inter - ventricular septum

C. Coronary sulcus

D. Inter - ventricular groove

Answer: C

Watch Video Solution

22. The opening of pulmonary vein is without valve because

A. It is a very small aperture

B. It has low blood pressure

C. Its opening is oblique

D. None of these

Answer: C

Watch Video Solution

23. A cardiac cycle invloves

A. Joint diastole - ventricular systole-auricular systole

B. Auricular systole-ventricular systole-complete cardiac distole

C. Auricular systole-joint diastole-ventricular systole

D. Auricular systole-ventricular diastole-joint diastole

Answer: B

 Watch Video Solution

24. The duration of the ventricular diastole in a normal cardiac cycle is

A. 0.3 second

B. 0.5 second

C. 0.4 second

D. 0.7 second

Answer: B

Watch Video Solution

25. The course of blood from the heart to the lungs and back to the heart is called

A. Systemic circulation

B. Pulmonary circulation

C. Single circulation

D. Double circulation

Answer: B

 Watch Video Solution

26. A portal system is a system in which

A. A vein starts from an organ and ends up in heart

B. A vein starts from an organ and ends up in another organ

C. A vein starts from heart and ends up in lungs

D. None of these

Answer: B

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27. The middle man of the body is

A. Blood

B. Plasma

C. Lymph

D. Serum

Answer: C

Watch Video Solution

28. Hepatic portal system is present in

A. Fishes, Amphibians and Reptiles

B. Reptiles and Birds

C. All mammals

D. All vertebrates

Answer: D

Watch Video Solution

29. Lymph differs from blood in possessing

A. More proteins and less waste products

B. Less proteins and more waste products

C. More proteins and more waste products

D. Less proteins and less waste products

Answer: B

Watch Video Solution

30. Chordae tendinae are found in

A. Ventricle

B. Left auricle

C. Right auricle

D. Interventricular septum

Answer: A

Watch Video Solution

Assignment Section C Previous Year Questions

1. The hapatic partal vein drains blood to liver from

A. Heart

B. Stomach

C. Kidneys

D. Intestine

Answer: D

Watch Video Solution

2. Adult human RBCs are enucleate. Which of the following statements (s) is/are most appropriate explanation for this feature ?

1.They do not need to reproduce

2. They are somatic cells

3. They do not metabolise

4. All their internal space is available for oxygen transport

A. Only (d)

B. Only (a)

C. (a), (c) & (d)

D. (b) & (c)

Answer: A

Watch Video Solution

3. Name the blood cells, whose reduction in number can cause clotting disorder, leading to excessive loss of blood from the body.

A. Erythrocytes

B. Leucocytes

C. Neutrophils

D. Thrombocytes

Answer: D

 Watch Video Solution

4. Serum differs from blood in

A. Lacking globulins

B. Lacking albumins

C. Lacking clotting factors

D. Lacking antibodies

Answer: C

 Watch Video Solution

5. Blood pressure in the pulmonary artery is

A. Less than that in the venae cavae

B. Same as that in the aorta

C. More than that in the carotid

D. More than that in the pulmonary vein

Answer: D

Watch Video Solution

6. Which one of the following blood vessels in mammals would normally carry the largest amount of urea

A. Hepatic Portal Vein

B. Renal Vein

C. Dorsal Aorta

D. Hepatic Vein

Answer: D

Watch Video Solution

7. It is much easier for a small animal to run uphill than for a large animal, because:

A. The efficiency of muscles in large animals is less than in the small animals

B. It is easier to carry a small body weight

C. Smaller animals have higher metabolic rate

D. Small animals have a lower O_2 requirement

Answer: C

Watch Video Solution

8. Which one of the following is correct ?

A. Blood = Plasma + RBC + WBC + Platelets

B. Plasma = Blood - Lymphocytes

C. Serum = Blood + Fibrinogen

D. Lymph = Plasma + RBC + WBC

Answer: A

 Watch Video Solution

9. Blood pressure in the mammalian aorta is maximum during

A. Diastole of the right atrium

B. Systole of the left atrium

C. Diastole of the right ventricle

D. Systole of the left ventricle

Answer: D

 Watch Video Solution

10. Erythropoiesis starts in

A. Red bone marrow

B. Kidney

C. Liver

D. Spleen

Answer: C

 Watch Video Solution

11. A woman with blood group 'A' marries a woman with blood group 'B', the possible groups of offsprings are:

A. O only

B. A and b only

C. A, B and AB only

D. A, B, AB and O

Answer: D

 Watch Video Solution

12. How do parasympathertic neural signals affect the working the heart

A. Reduce both heart rate and cardiac output

B. Heart rate is increased without affecting the cardiac output

C. Both heart rate and cardiac output increase

D. Heart rate decreases but cardiac output increases

Answer: A

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13. Person with blood group AB is considered as universal recipient because he has

A. Both A ad B antigens on RBC but no antibodies in the plasma

B. Both A and B antibodies in the plasma

C. No antigen on RBC and no antibody in the plasma

D. Both A and B antigens in the plasma but no antibodies

Answer: A

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14. The diagram given here is the standard ECG of a normal person. The P-wave represents the

A. Initiation of the ventricular contraction

B. Beginning of the systole

C. End of systole

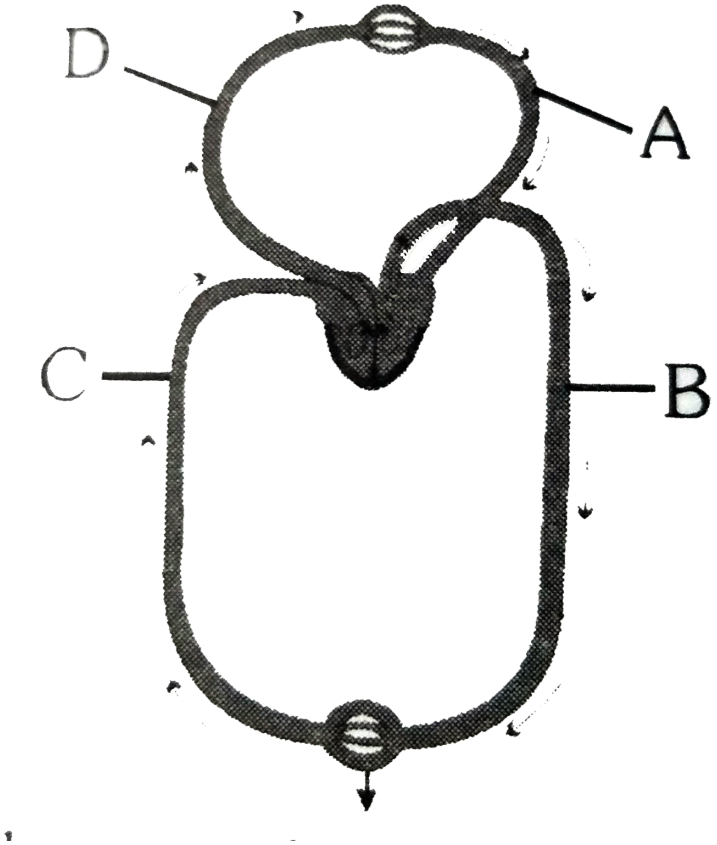
D. Contraction of both the atria

Answer: D

Watch Video Solution

15. Figure shoes schematic plan of blood circulation in humans with labels A to D, Identify

the label and give its function / s.



A. B - Pulmonary artery-takes blood from heart to lungs, $PO_2 = 90mm$ Hg

B. C - Vena Cava-takes blood from body parts to right auricle, $PCO_2 = 45mm$ Hg

C. D - Dorsal aorta-takes blood from heart to body parts, $PO_2 = 60mm$ Hg

D. A - Pulmonary vein-takes impure blood from body parts, $PO_2 = 60mm$ Hg

Answer: B

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16. A patient brought to a hospital with myocardial infraction is normally immediately given

A. Cyclosporin - A

B. Statins

C. Penicillin

D. Streptokinase

Answer: D

Watch Video Solution

17. A certain road accident patien with unknown blood group needs immediate blood transfusion. His one docter friend at once offers his blood .What was the blood group of the doner ?

A. Blood group O

B. Blood group A

C. Blood group B

D. Blood group AB

Answer: A

Watch Video Solution

18. Which one of the following is the main graveyard of RBC : —

A. Liver

B. Gall bladder

C. Kidney

D. Spleen

Answer: D

Watch Video Solution

19. A person with unknown blood group under ABO system, has suffered much loss in an accident and needs immediate blood trasfusion. His one friend who has a valid certifacte of his own blood type. What would have been the type of blood group of the donor friend

A. Type A

B. Type B

C. Type AB

D. Type O

Answer: D

20. Arteries are best defined as the vessels which

A. Carry blood from one visceral organ to another visceral organ

B. Supply oxygenated blood of the different organs

C. Carry blood away from the heart to different organs

D. Break up into capillaries which reunite to form a vein

Answer: C

21. Bundle of His is a part of which one of the following organs in humans

A. Pancreas

B. Brain

C. Heart

D. Kidney

Answer: C

Watch Video Solution

22. Which one of the following proteins involved in the coagulation of blood?

A. Fibrinogen

B. An albumin

C. Serum amylase

D. A globulin

Answer: A

Watch Video Solution

23. Which one of the following statements is correct regarding blood pressure ?

A. 190/110 mm Hg may harm vital organs like brain and kidney

B. 130/90 mm Hg is considered high and requires treatment

C. 100/55 mm Hg is considered an ideal blood pressure

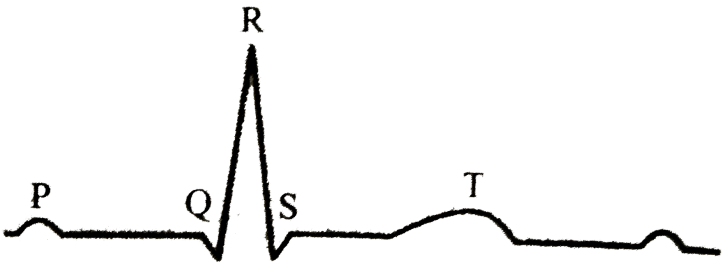
D. 105/50 mm Hg makes one very active

Answer: A

Watch Video Solution

24. The given figure is the ECG of a normal human. Which one of its components is correctly

interpreted below ?



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

Answer: C

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25. Which of the following statement is true about RBCs in humans?

A. They do not carry CO_2 at all

B. They carry about 20-25 percent of CO_2

C. They transport 99.5 percent of O_2

D. They transport about 80 percent oxygen only and the rest 20 percent of it is

transported in dissolved state in blood plasma

Answer: B

Watch Video Solution

26. If due to some injury the chordae tendineae 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 fo 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

Answer: A

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27. Given below are four statements (A-D) regarding human blood circulatory system

(A) Arteries are thick-walled and have narrow lumen as compared to veins

(B) Angina is acute chest pain when the blood circulation to the brain is reduced

(C) Persons with blood group AB can donate blood to any person with any blood group under ABO system

(D) Calcium ions play a very important role in blood clotting

A. (a) & (d)

B. (a) & (b)

C. (b) & (c)

D. (c) & (d)

Answer: A

28. The haemoglobin content per 100 ml of blood of normal healthy human adult is

A. 5 - 11 g

B. 25 - 30 g

C. 17 - 20 g

D. 12 - 16 g

Answer: D

29. The most polpularly known blood grouping is the ABO grouping. It is named ABO and not ABC, because, because "O" in it refers to having

A. Overdominance of this type on the genes for A and B types

B. One antibody only - either anti-A or anti - B on the RBCs

C. No antigens A and B on RBCs

D. Other antigens besides A and B on RBCs

Answer: C

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30. Compared to blood our lymph has

A. Plasma without proteins

B. More WBCs and no RBCs

C. More RBCs and less WBCs

D. No plasma

Answer: B

Watch Video Solution

31. There is no DNA in

A. Mature RBCs

B. A mature spermatozoan

C. Hair root

D. An enucleated ovum

Answer: A

Watch Video Solution

32. In a standard ECG which one of the following alphabets is the correct representation of the respective activity of the human heart ?

A. S - start of systole

B. T - end of diastole

C. P - depolarisation of the atria

D. R - repolarisation of ventricles

Answer: C

33. Globulins contained in human blood plasma are primarily involved in

A. Osmotic balance of body fluids

B. Oxygen transport in the blood

C. Clotting of blood

D. Defence mechanisms of body

Answer: D

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34. Most active phagocytic white blood cells are

A. Neutrophils and monocytes

B. Nuetrophils and eosinophils

C. Lymphocytes and macrophages

D. Eosinophils and lymphocytes

Answer: A

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35. Which type of white blood cells are concerned with the release of histamine and the natural anticoagulant heparin ?

A. Monocytes

B. Neutrophils

C. Basophils

D. Eosinophils

Answer: C

Watch Video Solution

36. the haemoglobin of a human foetus

A. Has a higher affinity for oxygen than that of an adult

B. Has a lower affinity for oxygen than that of the adult

C. Its affinity for oxygen is the same as that of an adult

D. Has only 2 protein subunits instead of 4

Answer: A

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37. In humans, blood passes from the post caval to the diastolic right atrium of heart due to

A. Pressure difference between the post caval and atrium

B. Pushing open of the venous valves

C. Suction pull

D. Stimulation of the sino auricular node

Answer: A

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38. Consider the following statements about biomedical technologies,

(i) During open heart surgery blood is circulated in the heart-lung machine

(ii) Blockage in coronary arteries is removed by angiography

(iii) Computerised Axial Tomography (CAT) shows detailed internal structure as seen in a section of body.

(iv) X-ray provides clear and detailed images of organs like prostate glands and lungs

Which two of the above statements are correct?

A. a and b

B. b and d

C. c and d

D. a and c

Answer: D

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39. If you suspect major deficiency of antibodies in a person, to which of the following would you look for confirmatory evidence

A. Haemocytes

B. Serum albumins

C. Serum globulins

D. Fibrinogen in the plasma

Answer: C

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40. Which one of the following mammalian cells is not capable of metabolising glucose to carbon-dioxide aerobically ?

A. Red blood cells

B. White blood cells

C. Unstriated muscle cells

D. Liver cells

Answer: A

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41. A drop of each of the following, is placed separately on four sides. 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

Answer: C

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42. The blue baby syndrome results from

A. Excess of chloride

B. Methaemoglobin

C. Excess of dissolved oxygen

D. Excess of TDS (Total Dissolved Solids)

Answer: B

43. G-6-P dehydrogenase deficiency is associated with heamolysis of :

A. Lymphocytes

B. RBCs

C. Platelets

D. Leucocytes

Answer: B

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44. Which of the following substances, if introdced into the blood system, would cause coagulation of blood at the site of its introduction

A. Fibrinogen

B. Prothrombin

C. Heparin

D. Thromboplastin

Answer: D

Watch Video Solution

45. Lymph collected from left side of the body collected through thoracic duct and finally opens into

A. Right sub clavian vein

B. Right sub calvian artery

C. Left sub clavian vein

D. Left sub clavian artery

Answer: C

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46. Systemic heart refers to

A. The heart that contracts under stimulation from nervous system

B. Left auricle and left ventricle in higher vertebrates

C. Entire heart in lower vertebrates

D. The two ventricles together in humans

Answer: B

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47. Which of the following layer of heart is related to difference in thickness of different chambers of heart ?

A. Outer fibrous coat

B. Epicardium

C. Myocardium

D. Endocardium

Answer: C

Watch Video Solution

48. Which of the following are in direct contact with the AV valves and prevent these from collapsing back into atria ?

A. Chordae tendinae

B. Papillary muscles

C. Columnae carnae

D. Musculi pentinati

Answer: A

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49. The pacesetter in the heart is called

A. Sino-atrial node (SAN)

B. Atrio-ventricular node (AVN)

C. Purkinje fibres

D. Papillary muscle

Answer: B

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50. Which one is the correct route through which pulse making impulse travels in the heart

A. SA node $\rightarrow$ Purkinje fibres $\rightarrow$ bundle of His $\rightarrow$ AV node $\rightarrow$ heart muscles

B. SA node $\rightarrow$ AV node $\rightarrow$ bundle of His $\rightarrow$ Purkinje fibres $\rightarrow$ heart muscles

C. AV node $\rightarrow$ bundle of His $\rightarrow$ SA node $\rightarrow$ Purkinje fibres $\rightarrow$ heart muscles

D. AV node $\rightarrow$ SA node $\rightarrow$ Purkinje fibres $\rightarrow$ bundle of His $\rightarrow$ heart muscles

Answer: B

 Watch Video Solution

51. Bundle of His is a network of

A. Muscle fibres distributed throughout the heart walls

B. Muscle fibres found only in the ventricle wall

C. Nerve fibres distributed in ventricles

D. Nerve fibres found throughout the heart

Answer: B

 Watch Video Solution

52. The cardiac pacemaker in a patient fails to function normally. The doctors find that an artifical pacemaker is to be grafted in him. It is likely that it will be grafted at the site of –

A. Antrioventricular bundle

B. Purkinje system

C. Sinoatrial node

D. Atrioventricular node

Answer: C

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53. Impullse of heart beat originates from -

A. SA node

B. AV node

C. Vagus nerve

D. Cardiac nerve

Answer: A

Watch Video Solution

54. Rate of heart beat is determined by

A. Purkinje fibres

B. Papillary muscles

C. AV - node

D. SA - node

Answer: D

Watch Video Solution

55. The heart sound "DUP" is Produced when : —

A. Mitral valve is closed

B. Semilunar valves at the base of aorta get closed

C. Tricuspid valve is opened

D. Mitral valve is opened

Answer: B

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56. At the end of joint diastole ventricle is

A. Completely filled by blood

B. Two third filled by blood

C. One third filled by blood

D. Completely empty

Answer: B

Watch Video Solution

57. To obtain a standard ECG, a patient is connected to the machine by three electrodes

A. One to each wrist and to the left ankle

B. One to each ankle and to the left wrist

C. One to each wrist and to the left chest region

D. One to each ankle and to the left chest region

Answer: A

 Watch Video Solution

58. When the heart muscles receive insufficient oxygen, it is indicated in the ECG as

A. Enlarged P - wave

B. Depressed S - T segment

C. Flattened T - wave

D. Both (2) & (3)

Answer: D

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59. In which point pulmonary artery is different from pulmonary vein:

A. Its lumen is broad

B. Its wall is thick

C. It has valves

D. It does not passess endothelium

Answer: B

Watch Video Solution

60. Pulmonary artery differs from pulmonary vein in having

A. No endothelium

B. Valves

C. Thicker wall

D. Oxygenated blood

Answer: C

 Watch Video Solution

61. In veins, valves are present to check backward flow of blood flowing at

A. Atmospheric pressure

B. High pressure

C. Low pressure

D. All of these

Answer: C

Watch Video Solution

62. Fastest distribution of some injectible meterial / medicine and with no risk of any kind can be achieved by injecting it into the

A. Muscles

B. Arteries

C. Veins

D. Lymph vessels

Answer: C

 Watch Video Solution

63. An adult human with average health has systolic and diastolic pressures as

A. 120 mm Hg and 80 mm Hg

B. 50 mm Hg and 80 mm Hg

C. 80 mm Hg and 80 mm Hg

D. 70 mm Hg and 120 mm Hg

Answer: A

Watch Video Solution

64. Which vertebrate organ receives only oxygenated blood

A. Spleen

B. Liver

C. Gill

D. Lung

Answer: A

Watch Video Solution

65. The thickening of walls of arteries is called

A. Arteriosclerosis

B. Arthritis

C. Aneurysm

D. Both (2) & (3)

Answer: A

Watch Video Solution

66. Which of the followng cannot be taken as a feature of open type circulatory system ?

A. Low pressure system

B. Well regulated blood supply to different organs

C. Blood returns to the heart slowly

D. Non formation of capillaries

Answer: B

Watch Video Solution

67. Which of the following blood vessels bypass are present in the circulatory system before birth ?

A. Foramen ovale

B. Fossa ovalis

C. Ductus arteriosus

D. Both (1) & (3)

Answer: D

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68. Isovolumetric systole is duration between

A. Closure of AV valve and opening of semilunar valve

B. Closure of semilunar valve and opening of AV valve

C. Closure of tricuspid and closure of bicuspid valve

D. Closure of tricuspid and opening of bicuspid valve

Answer: A

 Watch Video Solution

69. High level of which ions change the strength of contraction

A. Ca^{+2}

B. K^{+}

C. Na^{+}

D. All of these

Answer: D

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Assignment Section D Assertion Reason Type Questions

1. A : The cardiac impulse which originates from SA node in mammalian heart cannot spread directly from atria to ventricles

R : In mammalian heart there is no continuity between cardiac muscle fibres of atria and those of ventricles except AV bundles.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

Watch Video Solution

2. A : First phase of ventricular filling is rapid and causes 3^{rd} sound of heart.

R : It is because of auricular systole.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: C

3. A : Dub is a long and sharp sound.

R : It is caused by closing of atrio ventricular valves.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: D

Watch Video Solution

4. A : Portal system consists of veins which start from capillaries and end into capillaries.

R : All vertebrates have hepatic portal system.

A. If both Assertion & Reason are true and the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: B

5. A : Left ventricle pumps blood at a much higher pressure to all body parts involved in systemic circulation.

R : The muscular wall of the left ventricle is two to four times as thick as the wall of right ventricle.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

Watch Video Solution

6. A : The resting heart rate, about 75/minutes, usually is lower than the autorhythmic rate of the SA node (90 - 100 beats/minute).

R : At rest condition, the parasymphathetic effects dominate.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

Watch Video Solution

7. A : Elevated levels of Na^+ increases the heart rate and contractility.

R : Elevated Na^+ level increase the excitability of SA node.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: D

8. A : Endocardium provides a smooth lining for the inside of the heart and covers the valves of the heart.

R : Endocardium is continuous with the endothelial lining of the large blood vessels

associated with the heart and the rest of the cardiovascular system.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: B

Watch Video Solution

9. A : Isovolumetric systole of a normal cardiac cycle is responsible for the opening of semilunar valves causing the blood flow into aortic aorta and pulmonary aorta.

R : During isovolumetric systole, intraventricular

pressure increases as semilunar and AV valves are closed and ventricles are contracting .

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A