



# **BIOLOGY**

## **BOOKS - CENGAGE BIOLOGY (ENGLISH)**

### **BODY FLUIDS AND CIRCULATIONS**

#### **Exercise Choose The Correct Option**

1. 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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2. Which of the following 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**



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3. In cockroach, the dorsal chamber of hemocoel is called

A. A pericardial sinus

B. perivisceral sinus

C. Perineural sinus

D. peritoneal sinus

**Answer: A**



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4. A pair of triangular muscles in each segment, present on the either side of a cockroach heart, is of

- A. Alary muscles
- B. Tergosternal muscles
- C. intercostal muscles
- D. Phrenic muscles

**Answer: A**



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5. Which is not a function of blood in cockroach?

- A. Transport of nutrients
- B. Transport of gases
- C. Reservoir of water
- D. Main hydrostatic pressure

**Answer: B**



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6. In cockroach, the anterior end of heart opens into

- A. Pericardial sinus
- B. Perivisceral sinus
- C. Perineural sinus
- D. Head sinus

**Answer: D**



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7. Single type of circulation of blood is found in

A. Fish

B. Frog

C. Man

D. Lizard

**Answer: A**



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**8.** Fishes have venous heart. The heart receives deoxygen-ated blood from all over the body except

A. Fins

B. Hindlimbs

C. Gills

D. Forelimbs

**Answer: C**



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9. Find the odd one out.

A. Prawn and insects

B. Frog and snails

C. Snails and mussels

D. Prawn and mussels

**Answer: B**



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10. Blood is red but no RBCs are found in

A. Frog

B. Rabbit

C. Man

D. earthworm

**Answer: D**



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**11.** 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 L

B. 4.5 L

C. 4 L

D. 3 L

**Answer: A**



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12. Ringer solution contains.

A. iodine and salt

B. Acetic acid and wax

C. sodium and potassium ions

D. water and acid fuchsine

**Answer: C**



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13. Which of the following has a neurogenic heart?

A. Cockroach

B. Octopus

C. Frog

D. Both(1)and(2)

**Answer: A**



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14. Which layer of the heart is responsible for differential thickness of different chambers?

- A. Epicardium
- B. Myocardium
- C. Endocardium
- D. Pericardium

**Answer: B**



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**15.** The two auricles are demarcated externally 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**



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**16.** Which of following pulmonary bypasses are present in the circulatory system before birth?

- A. Foramen ovale
- B. Ductus arteriosus
- C. Conus arteriosus
- D. Both (1) and (2)

**Answer: D**



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17. The opening of superior vena cava is guarded by

- A. Semilunar valves
- B. Columnae carnae
- C. Principal septum
- D. None of these

**Answer: D**



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**18.** 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**



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19. The aperture between right auricle and ventricles called

- A. Semilunar valves
- B. Tricuspid valves
- C. Bicuspid valve
- D. Valve of inferior vena cava

**Answer: B**



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20. Chordae tendinae in the heart are found in

A. Ventricle

B. Left auricle

C. Right auricle

D. None of these

**Answer: A**



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21. One of the following lies in the wall of right auricle

- A. Purkinje fibers
- B. bundle of his
- C. SA node
- D. Chordae tendinae

**Answer: C**



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22. Ventricular systole is stimulated by

A. SA node

B. AV valve

C. AV node

D. AV aperture

**Answer: C**



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23. The center for heartbeat regulation is present in

A. Pons varolii

B. Cerebrum

C. Cerebellum

D. Medulla

**Answer: D**



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24. A cardiac cycle involves

A. (1) Joint diastole-ventricular systole-auricular systole

B. (2) Auricular systole-ventricular systole-complete cardiac diastole

C. (3) Auricular systole-joint diastole-ventricular systole

D. (4) Auricular systole-ventricular diastole-joint diastole

**Answer: B**



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**25.** Mammals are said to have a double circulatory system.it means that

A. There are two types of blood vessels attached to every organ, e.g,an artery and a vein.

B. There are two system, one from the heart to the lungs and back to the rest of the body via heart.

C. The blood circulates twice in the heart.

D. Both (2) and (3)

**Answer: D**



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

A. 0.3 s

B. 0.5 s

C. 0.4 s

D. 0.7 s

**Answer: B**



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27. 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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**28.** The wall of arteries and veins differ from each other mainly w.r.t.

A. Tunica adventitia

B. Tunica media

C. tunica externa

D. Tunica intima

**Answer: B**



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29. 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**



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30. Superior mesenteric artery supplies blood to

A. Pancreas and ileum

B. Hepatic and gastric arteries

C. Both(1)and (2)

D. Stomach and proximal half of large intestine

**Answer: A**



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**31.** The blood from diaphragm is collected by

A. Phrenic vein

B. Iliac vein

C. Hepatic vein

D. Renal vein

**Answer: A**



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32. Hypogastric artery supplies blood to

A. Urinary bladder

B. Pancreas

C. Abdominal body wall

D. Both a and c

**Answer: A**



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**33.** A portal system is one in which

A. A vein start from an organ and end 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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**34.** Hepatic portal system is present in

A. Fishes, amphibians, and reptiles

B. Reptiles and birds

C. All mammals

D. All vertebrates

**Answer: D**



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**35.** The middle man of the body is

A. Blood

B. Plasma

C. Lymph

D. Serum

**Answer: C**



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**36.** Lymph differs from blood in possessing

A. More proteins and fewer waste products

B. Fewer proteins and more waste products

C. More proteins and waste products

D. Fewer proteins and waste products

**Answer: B**



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**37.** Lymphatic vessels from the lower body part  
from

A. Right lymphatic duct

B. Thoracic duct

C. Carotid duct

D. Jugular duct

**Answer: B**



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**38.** Thoracic duct opens into

A. Right subclavian artery

B. Left subclavian artery

C. Right subclavian vein

D. Left subclavian vein

**Answer: D**



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**39.** Which of the following waves of ECG shows ventricular depolarization

A. P wave

B. QRS wave

C. T wave

D. U wave

**Answer: B**



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**40.** The time taken by the impulse to travel through atria, AV node, and the rest of conducting tissue is

- A. PQ interval
- B. PQRS interval
- C. QRS interval
- D. ST segment

**Answer: A**



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41. PQ interval gets lengthened during

A. Rheumatic fever

B. Arteriosclerotic heart (plaque formation)

C. Arteriosclerotic heart (calcification)

D. All of these

**Answer: D**



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42. William Harvey is known for the discovery of

- A. Blood transfusion
- B. Blood clotting
- C. Blood circulation
- D. Blood purification

**Answer: C**



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**43.** Which one of the following does not have an open circulatory system?

A. Chelone

B. Cockroach

C. Frog's tadpole

D. Both(1)and(3)

**Answer: D**



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**44.** The heart of a crocodile consists of

A. A single auricle and two ventricles

B. Two auricles and a single ventricle

C. Two auricles and two ventricles

D. A single auricle and a single ventricle

**Answer: C**



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**45.** Which of the following has myogenic heart?

A. Frog

B. Humans

C. Rabbit

D. All of the above

**Answer: D**



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**46.** Purkinje's fibres are special types of

A. Muscle fibers located in heart

B. Nerve fibers located in cerebrum

C. Connective tissue fibers joining one  
bone to another bone

D. Sensory fibers extending from retina  
into optic nerve

**Answer: A**



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**47.** The regulation of heartbeat in mammals is due to

- A. The volume of blood in the circulatory system
- B. The presence of excess of oxygen in blood
- C. The presence of thyroxine in blood
- D. The presence of pacemaker in the heart

**Answer: D**



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**48.** The first heart sound is

A. "Lub" sound at the end of systole

B. "Dub" sound at the end of systole

C. "Lub" sound at the end of systole

D. "Dub" sound at the beginning of systole

**Answer: C**



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**49.** Pathway of impulse or correct route through which pulse making impulse travels in the heart

A. SA node → Purkinje fibers Bundle of His → AV node → Heart muscles

B. AV node → SA node → Purkinje fibers Bundle of His → Heart muscles

C. AV node → Bundle of His → SA node → Purkinje fibers Heart muscles

D. SA node → AV node → Bundle of His

→ Purkinje fibers Heart muscles

**Answer: D**



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**50.** If the vagus branch of frog is stimulate the heart will show : —

A. Stoppage of heartbeat

B. Decreased heartbeat

C. Increased heartbeat

D. No change

**Answer: B**



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**51. During diastole**

A. Blood enter lungs

B. Blood leaves the ventricle

C. Blood leaves the heart

D. Blood enter the heart

**Answer: D**



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**52. During systole of heart**

- A. Blood enters the heart
- B. Blood leaves the heart
- C. Blood leaves the ventricle
- D. Blood enters lungs

**Answer: C**



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**53.** The apex beat of heart is synchronous with

- A. First sound
- B. Second sound
- C. Third sound
- D. Fourth sound

**Answer: A**



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**54.** Covering of heart is called

- A. Pericardium
- B. Peritoneum
- C. Perineurium
- D. Periostium

**Answer: A**



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55. Post caval in the right auricle is guarded by

- A. Eustachian valve
- B. Bicuspid valve
- C. Tricuspid valve
- D. Atrio-ventricular valve

**Answer: A**



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**56.** Tunica media of an elastic artery is made up mainly

A. Smooth muscle fibre

B. Loose alveolar tissue

C. Elastic fibers

D. Collagen fibres

**Answer: A**



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57. How much of the total blood volume is present in heart ?

A. 0.025 l/min

B. 0.17 l/min

C. 0.09 l/min

D. 5.25 l/min

**Answer: A**



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58. Pylangium is part of

A. Truncus arteriosus

B. Left atrium

C. Right atrium

D. Ventricles

**Answer: A**



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59. The coronary sinus in the heart is situated along its

A. Left margin

B. Right margin

C. Diaphragmatic surface

D. Lower boarder of the heart

**Answer: B**



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**60.** In all the leads of ECG, all the following are positive waves except

A. P

B. Q

C. R

D. T

**Answer: B**



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**61. Cardiac output signifies**

A. The amount of blood entering the heart  
per unit time

B. The amount of blood entering the lung  
per unit time

C. The amount of blood leaving the heart  
per unit time

D. The amount of blood leaving the lung  
per unit time

**Answer: C**



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**62. Heartbeat in vertebrates is**

A. Neurogenic

B. Myogenic

C. Both

D. None

**Answer: B**





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**63.** Single circuit heart occurs in

A. Fishes

B. frog

C. Reptiles

D. Man

**Answer: A**



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**64.** Which of these has a closed type of circulatory system : —

A. Cockroach

B. Fish

C. Mollusca

D. Scorpion

**Answer: B**



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**65.** The study of blood circulation system is called

A. Angiology

B. Cardiology

C. Hematology

D. Osteology

**Answer: A**



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66. Father of angiology is

A. William harvey

B. Batson

C. Marsello malpighi

D. Landsteiner

**Answer: A**



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67. The color of lymph is

A. White

B. Pale yellow

C. Colourless

D. Milky

**Answer: C**



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**68.** Lymph nodes in man are found abundantly

in

A. Fingers

B. Neck

C. Arms

D. Legs

**Answer: B**



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**69. Coagulation of lymph is :**

A. Faster than blood

B. Not possible

C. Slower than blood

D. A passive process

**Answer: C**



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**70.** An artery can be distinguished from a vein  
in having

A. Thicker wall

B. Lesser lumen

C. No valves

D. All of the above

**Answer: D**



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71. Glucose is carried from digestive tract to liver by

A. Hepatic artery



B. Hepatic portal vein

C. Pulmonary vein

D. None of the above

**Answer: B**



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72. Pulmonary artery differs from pulmonary vein in having

A. Thick wall

B. Thin wall

C. Valves

D. Both (2) and (3)

**Answer: A**



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**73.** Ventricular contraction is in command of

: —

A. SA node

B. AV node

C. Purkinje fibers

D. Papillary muscles

**Answer: A**



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**74.** Fully digested food reaches to liver by

A. Hepatic portal vein

B. Hepatic artery

C. Hepatic vein

D. All the above

**Answer: A**



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**75.** Impulse of heartbeat originates from

A. SA node

B. AV node

C. Vagus nerve

D. Cardiac nerve

**Answer: A**



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**76.** Which of the following statements is true for lymph ?

A. WBC and serum

B. All components of except RBCs, platets, and some protelets

C. RBCs, WBCs, and plasma

D. RBCs, proteins and platelets

**Answer: B**



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**77.** Bundle of His is a network of

A. Muscle fibers distributed throughout the heart walls

B. Muscle fibers found only in the ventricle wall

C. Nerve fibers distributed in ventricle

D. Nerve fibers found throughout the heart

**Answer: B**



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**78.** 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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**79.** The cardiac pacemaker in a patient fails to function normally. The doctors find that an artificial pacemaker is to be grafted in him. It is likely that it will be grafted at the site of

(a) atrioventricular bundle

(b) purkinje system

(c) sinu-atrial node

(d) atrio-ventricular node

A. Purkinje system

B. SA node

C. AV node

D. AV bundle

**Answer: B**



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**80.** Which has no muscular walls : —

A. Artery

B. Vein

C. Arteriole

D. Capillary

**Answer: D**



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**81.** The process of blood clot formation within the circulatory system is

- A. Thrombosis
- B. Thrombocytes
- C. Thrombin
- D. Thrombocytopenia

**Answer: A**



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**82.** When the right ventricle contracts the blood goes into

A. Aorta

B. Brani

C. Pulmonary artery

D. None

**Answer: C**



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**83. Splenic artery arises from**

- A. Anterior mesenteric artery
- B. Coeliac artery
- C. Posterior mesenteric artery
- D. Intestinal artery

**Answer: C**



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**84.** Glucose is carried from digestive tract to liver by

- A. Hepatic artery
- B. Hepatic portal vein
- C. Pulmonary vein
- D. None of these

**Answer: B**



**85.** Systemic heart refers to

- A. The two ventricles together in humans
- B. The heart that contracts under stimulation from nervous system
- C. Left auricle and left ventricle in higher vertebrates
- D. Entire heart in lower vertebrates

**Answer: C**



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**86.** Carotid artery carries

A. Impure blood from brain

B. Oxygenated blood to anterior region of  
body or to brain

C. Impure blood to kidney

D. Oxygenated blood to heart

**Answer: B**





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**87.** Blood circulation that starts in capillaries and ends in capillaries is called

- A. Portal circulation
- B. Hepatic circulation
- C. Cardiac circulation
- D. None of these

**Answer: A**



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**88.** A portal system is one in which

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

B. An artery breaks up in an organ and restarts by the union of its capillaries.

C. The blood from the gut is brought into the kidney before it is poured into posterior vena cava.

D. A vein breaks up in an organ into capillaries and re-starts by their union as a new vein in the same organ.

**Answer: D**



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**89. Spleen is**

A. Hematopoietic

B. Lymphoid

C. Reproductive

D. Celluloid

**Answer: B**



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**90.** In connection with circulatory system valves are present

A. Not only in heart and blood vessels of vertebrates and invertebrates, but

in vertebrate lymphatics as well

B. In vertebrates heart only

C. In both vertebrate and invertebrate hearts

D. In both vertebrate and invertebrate hearts and their blood vessels as well

**Answer: A**



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

- A. P:depolarization of the atria
- B. R:repolarization of ventricles
- C. S:start of systole
- D. T:end of diastole

**Answer: A**



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92. 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 pacemaker will stop working

B. The blood will tend to flow back into the left atrium.

C. The flow of blood into the aorta will be slowed down.

D. The flow of blood into the pulmonary artery will be reduced.

**Answer: D**



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**93.** Fastest distribution of some injectible material/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**



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**94.** Which statement is true about the venous blood vessels of frog?

A. Lingual and submandibular unite to from internal jugular.

B. Musculo-cutaneous and brachial unite to from the subclavian.

C. The ventral abdominal vein drains into the posterior vena cava.

D. The pelvic veins unite to from the renal portal vein.

**Answer: C**



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95. Which of following is not a major organ of lymphatic system?

A. Spleen

B. Kidney

C. Thoracic duct

D. Jugular vein

**Answer: B**



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96. Lymph vessels are united to form

A. Lymph heart

B. Cisterna chyli

C. Thoracic duct

D. Jugular vein

**Answer: C**



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97. Cardiac output is determined by

- A. Heart rate
- B. Stroke volume
- C. Blood flow
- D. Both(1)and(2)

**Answer: D**



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98. During high blood pressure, regulatinos of heart beat and circulation are controlled by

A. Vasodilator and vasconstrictor centers

B. Cardio-stimulatory and vasoconstrictor centers

C. Cardio-Inhibitory and vasoconstrictor centers

D. Cardio-inhibitory and vasodilator centers

**Answer: D**



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99. Blood pressure is measured by

A. Sphygmomanometer

B. Phonocardiogram

C. Electrocardiogram

D. Stethoscope

**Answer: A**



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**100.** All veins carry deoxygenated blood except

- A. Renal vein
- B. Hepatic vein
- C. Hepatic portal vein
- D. Pulmonary veins

**Answer: D**



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**101.** Common thrombosis leading to myocardial infarction is of

- A. Right circumflex coronary artery
- B. Left circumflex coronary artery
- C. Left anterior descending artery
- D. Right coronary artery

**Answer: C**



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**102.** Which one of the following vertebrate organs receives the oxygenated blood only ?

A. Gill

B. Spleen

C. Lung

D. Liver

**Answer: B**



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**103.** Blood vessel which brings oxygenated blood to left auricle is

- A. Pre caval vein
- B. Post caval vein
- C. Pulmonary vein
- D. Pulmonary artery

**Answer: C**



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**104.** Oxygenated blood is carried by

- A. Pulmonary vein
- B. Pulmonary artery
- C. Renal vein
- D. Hepatic portal vein

**Answer: A**



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**105.** The blood vessel which brings oxygenated blood from lungs towards the heart of frog

- A. Pre caval vein
- B. Post caval vein
- C. Pulmonary vein
- D. Pulmonary artery

**Answer: C**



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**106.** All arteries carry oxygenated blood except

A. Systemic

B. hepatic

C. Pulmonary

D. Cardiac nerve

**Answer: C**



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**107.** The blood vessel of frog which opens in its ventricles bringing oxygenated blood is

- A. Pulmocutaneous artery
- B. Inferior vena cava
- C. Pulmocutaneous vein
- D. Superior vena cava

**Answer: A**



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**108.** A yellow substance oozing out from wound has

- A. Lymph+RBC+WBC
- B. Lymph+RBC+Dead bacteria
- C. Lymph+WBC+Deadbacteria
- D. Lymph+Dead leucocytes

**Answer: B**



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**109.** Which one of the following human organs is often called the 'graveyard' of RBCs?

A. Red bone marrow

B. Spleen

C. Kidney

D. Intestine

**Answer: B**



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**110.** Iliac artery carries blood to

A. Hind limb

B. Fore limb

C. Lung

D. Brain

**Answer: A**



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**111.** Hypophyseal portal system is found in

A. Kidney

B. Liver

C. Brain

D. Heart

**Answer: C**



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**112.** Which of the following statements is wrong about the closed circulatory system?

- A. Blood remains within blood vessels and never comes in direct connect 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.

**Answer: C**



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**113.** Incomplete double circulation is found in which of the following animals?

A. Birds

B. Mammals

C. Birds and mammals

D. Amphibians and reptiles

**Answer: D**



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**114.** Which of the following is correct about human heart ?

A. The volume of both atria  $gt$  the volume of both ven-tricles

B. The volume of both ventricle  $gt$  the volume of both atria

C. The volume of atria = the volume of both ven-tricles

D. Ventricles are upper chambers and atria are lower chambers in our heart

**Answer: B**



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## 115. Match the column

### Column I

- (a) Apple
- (b) Coconut
- (c) Jackfruit

### Column II

- (i) Outer portion of receptacle
- (ii) Fleshy thalamus
- (iii) Thalamus and pericarp
  
- (d) Guava
- (e) Pineapple
  
- (iv) Endosperm
- (v) Bract, perianth and seeds



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**116.** 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

**Answer: A**



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117. Which one represents pulmonary circulation ?

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 Ventricle

D. Right

Ventricle

Oxygenated  
→  
blood

Lungs

Deoxygenated  
→  
blood

Left Ventricle

**Answer: C**



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**118.** Hepatic portal system carries

A. Oxygenated blood from liver to intestine

B. Deoxygenated blood from liver to  
intestine

C. Oxygenated blood from intestine to liver

D. Deoxygenated blood from intestine to  
liver

**Answer: D**



**Watch Video Solution**

**119.** The cardiac cycle includes all of the following events EXCEPT

- A. The closing and opening of the heart valves during each heartbeat.
- B. The movement of impulse from the SA node to all regions of the heart wall.
- C. The number of time the heart beats in one minute.
- D. The changes in blood volume in all chambers of the heart.

**Answer: C**



**Watch Video Solution**

**120.** Heaviness with severe chest pain which may disappear with rest indicates

- A. Angina pectoris
- B. Atherosclerosis
- C. Arteriosclerosis
- D. Hyperthyroidism

**Answer: A**



**Watch Video Solution**

**121.** Select correct combination of statements for lymph.

i. It helps to maintain fluid balance of the body.

ii. It is contained in lymphatic vessels and lymphatic organs in mammals.

iii. It is derived from tissue fluid.

iv. It contains less antibodies than plasma.

v. It flows in both directions.

A. (i), (ii), (iii) and (v)

B. (ii), (iii), (iv)

C. (i), (iv), (v)

D. (iii), (iv), (v)

**Answer: B**



**Watch Video Solution**

<b>Blood Group</b>	<b>Antigen on RBCs</b>	<b>Anti-body in Plasma</b>	<b>Donor's Group</b>
A	A	anti b	A,O
B	B	anti A	B,O
AB	X	Nil	Z
122. O	Nil	Y	O

Choose the correct option for X, Y and Z.

A. X-B, Y-A, Z-AB

B. X-AB, Y-Nil, Z-AB, ABO

C. X-AB, Y-anti-AB, Z-AB, A,B,O

D. X-AB,Y-anti-AB,Z-AB,A,B

**Answer: C**



**Watch Video Solution**

**123.** Erythropoiesis is associated with

i. Spleen

ii. Red bone marrow



iii. Kidney

iv. Liver

A. i and ii only

B. ii and iv only

C. i and iv only

D. i, ii, iii and iv

**Answer: D**



**Watch Video Solution**

124. Blood vessel carrying least  $CO_2$  is

- A. Pulmonary vein
- B. Pulmonary artery
- C. Vena cava
- D. Hepatic vein

**Answer: A**



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**125.** Heart block is the failure of stimulation to the ventricles following atrial contraction. Which one of the following heart structures could not be involved in heart block?

A. Atrioventricular node

B. Bundle of his fibers

C. Purkinje fibers

D. sinoatrial node

**Answer: D**



**Watch Video Solution**

**126.** Rupture of chordae tendineae:

- A. Help the A-V valve to close
- B. Prevent the bulging of A-V valve into the atria during contraction
- C. Causes regurgination of blood into the atria during ventricular systole
- D. Has no effect on haemodynamics of circulation

**Answer: C**



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**127.** Maximum filling of the ventricles takes place during which phase of the cardiac cycle?

A. Protodiastole

B. Isovolumetric ventricular relaxation phase

C. Ventricular diastole proper

D. Last rapid filling phase due to atrial systole

**Answer: C**



**Watch Video Solution**

**128.** The incorrect statement regarding transition elements is

A. It occurs during the emptying phase of ventricles

B. Slow filling of ventricles occur in the this  
period

C. Third heart sound coincides with perod

D. A-V valve open at the beginning of this  
period

**Answer: B**



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**129.** Which of following is not recorded in ECG?

A. Atrial depolarization

B. Atrial repolarization

C. Ventricular depolarization

D. Ventricular repolarization

**Answer: B**



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**130.** The duration of cardiac cycle in a normal man is



A. 0.8 seconds

B. 80 seconds

C. 60 seconds

D. 72 seconds

**Answer: A**



**Watch Video Solution**

**131.** Contraction of right ventricle pumps blood into

A. Dorsal aorta

B. Pulmonary vein

C. Coronary artery

D. Pulmonary artery

**Answer: D**



**Watch Video Solution**

**132.** Which of the following events do not occur during joint diastole ?

(A) All four chamber of heart are in relaxed

state

(B) Atrial repolarization valve open

(C ) Action potential is conducted from SAN to  
AVN

(D) Blood from the pulmonary veins and vena  
cava flows into the left and right ventricles  
respectively through the left and right atria

(E ) The semilunar valves are closed

A. Only E

B. Only C

C. Only D

D. Only A and B

**Answer: B**



**Watch Video Solution**

**133.** Identify the correct sequence of events in a cardiac cycle

A. Diastole,atrial,systole,ventricular diastole

B. Atrial      systole,ventricular      diastole,  
ventricular systole

C. Atrial systole,ventricular systole, joint diastole

D. Ventricular diastole  
diastole,diastole,ventricular systole,atrial systole

**Answer: C**



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**134.** Which one indicates the hypertension ?

A. 120/80 mmHg

B. 80/120 mmHg

C. 140/90 mmHg

D. 40/60 mmHg

**Answer: C**



**Watch Video Solution**

**135.** Blood circulation that starts in capillaries and ends in capillaries is called

A. Portal circulation

B. Renal circulation

C. Hepatic circulation

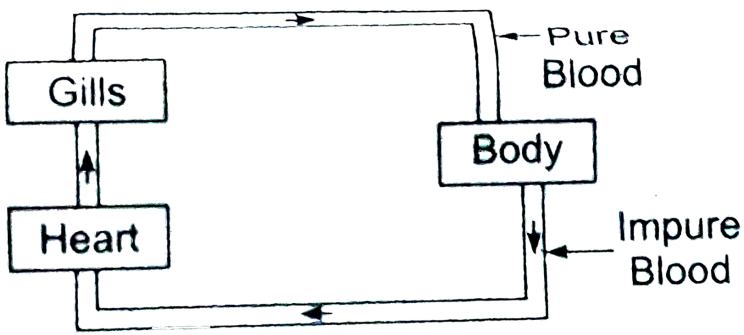
D. Lymphatic circulation

**Answer: A**



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**136.** The given diagram represents circulation  
in



- A. Reptiles
- B. Amphibians
- C. Fish
- D. Birds

**Answer: C**



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137. In the given diagram which one is vena cava ?



A. A

B. B

C. C

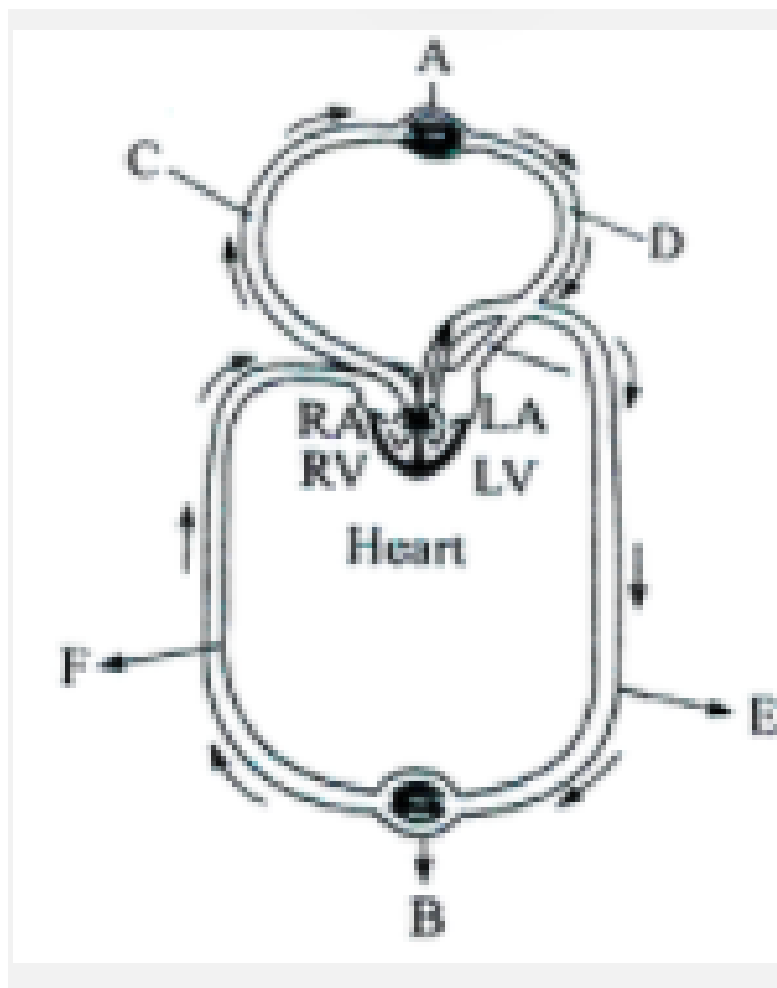
D. D

**Answer: A**



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138. Identify A to F.



A. A-Lungs, B-Body parts, C-Pulmonary vein,  
D-Pulmonary artery, E-Dorsal aorta, F-  
Vena cava

B. A-Lungs, B-Body parts, C-Pulmonary  
artery, D-Pulmonary vein, E-Dorsal aorta,  
F-Vena cava

C. A- Lungs, B-Body parts, C-Pulmonary  
artery, D-Pulmonary vein, E-Vena cava, F-  
Dorsal aorta

D. A-Body parts, B-Lungs, C-Pulmonary artery, D-Pulmonary vein, E-Vena cava, F-Dorsal aorta

**Answer: B**



**Watch Video Solution**

**139.** Identify whether the given statements are true or false for double circulation.

I. It checks the mixing of oxygenated and deoxygenated blood.

II. It carries only oxygenated blood.

Choose the correct option accordingly.

A. I-False, II-False

B. I-True, II-True

C. II-False, I-True

D. I-True, II-False

**Answer: B**



**Watch Video Solution**

**140.** Carotid artery supplies

A. Lungs

B. Intestine

C. Brain

D. None of these

**Answer: C**



**Watch Video Solution**

## 141. Match the following

- |               |   |
|---------------|---|
| (i) Magnesium | (p) Activator of alcohol dehydrogenase      |
| (ii) Zinc     | (q) Component of ferredoxin and cytochromes |
| (iii) Iron    | (r) Activator of Rubisco                    |
| (iv) Boron    | (s) Pollen germination                      |

A. A-v, B-iv, C-iii, D-ii, E-i

B. A-i, B-ii, C-iii, D-iv, E-v

C. A-v, B-iv, C-ii, D-iii, E-i

D. A-v, B-ii, C-iv, D-iii, E-i

**Answer: A**



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**142.** Which of the following is a cell fragment ?

A. Blood platelets

B. Bone cells

C. Lymphocytes

D. Leucocytes

**Answer: A**



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**143.** The path which the blood flows through during pulmonary circulation is :

A. Right ventricle  $\xrightarrow[\text{Artery}]{\text{Pulmonary}}$  Lung

$\xrightarrow[\text{vein}]{\text{Pulmonary}}$  Right atrium

B. Left ventricle  $\xrightarrow{\text{Aorta}}$  Body  $\xrightarrow{\text{Vena cava}}$

Right atrium

C. Right ventricle  $\xrightarrow[\text{vein}]{\text{Pulmonary}}$  Lung

$\xrightarrow[\text{Artery}]{\text{Pulmonary}}$  Left atrium

D. Right

ventricle

Pulmonary  
Artery

Lung

Pulmonary  
Vein

Left atrium

**Answer: D**



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## 144. Heart failure

(i) Same as heart attack

(ii) Heart is not pumping blood effectively enough to meet the needs of the body.

(iii) It is often referred to as Atherosclerosis.

(iv) It is sometimes called congestive heart failure.

(v) It occurs due to conditions that affect the blood flow.

(vi) The heart stops beating.

Incorrect statements are :

A. i, ii, iii, iv

B. ii, iii, iv, v

C. ii, iii, iv

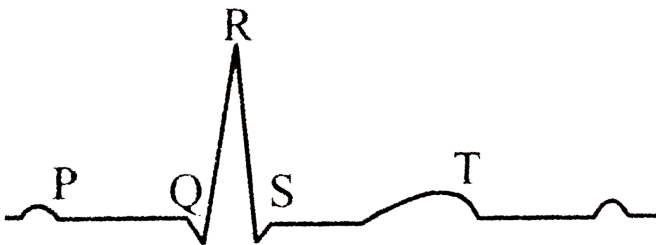
D. i, iii, v, vi

**Answer: D**



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**145.** Examine the diagrammatic representation of standard ECG. Select an option with correct matching



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**Exercise Assertion Reasoning 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 and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**



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2. A : First phase of ventricular filling is rapid and causes 3<sup>rd</sup> sound of heart.

R : It is because of auricular systole.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: C**



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3. The heart sound dub is produced by closing of \_\_\_\_\_

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



B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



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4. [A]: A portal system is a complex of veins which begins in capillaries and ends in capillaries before the blood which courses through it is returned to the heart.

[R]: All vertebrates have a hepatic portal system.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: B**



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5. Assertion Arteries possess smooth muscles on their walls.

Reason These smooth muscles help in regulating blood volume flowing through a tissue of organ.

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

B. If both Assertion and Reason are true, but the Reason is not the correct

explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**



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**6. Assertion :** The open circulatory system is more efficient than the closed circulatory system.

**Reason :** The blood flows far more rapidly in

open circulatory system than in the closed one.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



**Watch Video Solution**

7. Assertion : The heart of fish contains only deoxygenated blood.

Reasoning : Oxygenated blood does not return back to the heart in fishes.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**



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**8. Assertion :** The cardiac impulse is said to be myogenic.

**Reasoning :** The rate of formation and conduction of cardiac impulse can be changed by the action of nerves.

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

B. If both Assertion and Reason are true, but the Reason is not the correct

explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: B**



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9. Assertion Left ventricle of heart has a thinner wall than that of right ventricle.

Reason Left ventricle needs to pump blood to nearby lungs only.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



**Watch Video Solution**

**10. Assertion :** The AV bundle is essential for the conduction of cardiac impulse.

**Reason:** There is no continuity between the cardiac muscle fibers of the auricles and those of the ventricles.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**



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**11. Assertion :** The AV node is also called as the pacemaker of the heart.

**Reasoning :** It is because of the fact that the AV node determines the rate of heartbeat.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



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**12.** Assertion : There is no mixing of oxygenated and deoxygenated blood in the human heart.

Reason : Valves are present in the heart which

allows the movement of blood in one direction only.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.



**Answer: B**



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**13. Assertion :** Hypotension is observed in arteriosclerotic patients.

**Reasoning :** In the condition of arterosclerosis, arteries gain their elasticity and get stiffened.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



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**14. Assertion :** ECG is of immense diagnostic value in the cardiac diseases.

**Reason :** Defects in cardiac functions can be reflected in changes in the pattern of electrical potential recorded in the ECG.

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

B. If both Assertion and Reason are true, but the Reason is not the correct

explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



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**15. Assertion :** An artificial pacemaker can replace the SA node of heart.

**Reasoning :** This is because an artificial

pacemaker is capable of stimulating the heart electrically to maintain its beats.

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

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**



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## Archives Choose The Correct Option

1. A drop of each of the following is placed separately on four slides . Which of them will not coagulate ?

A. Whole blood from pulmonary vein

B. Blood plasma

C. Blood serum

D. Sample from the thoracic duct of  
lymphatic system

**Answer: C**



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

A. stimulation of the sino auricular node

B. pressure difference between the post  
caval and atrium

C. pushing open of the venous valves

D. suction pull

**Answer: D**



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**3.** The most active phagocytic white blood cells  
are



- A. eosinophils and lymphocytes
- B. neutrophils and monocytes
- C. neutrophils and eosinophils
- D. lymphocytes and macrophages

**Answer: B**



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

A. Eosinophils

B. Monocytes

C. Neutrophils

D. Basophils

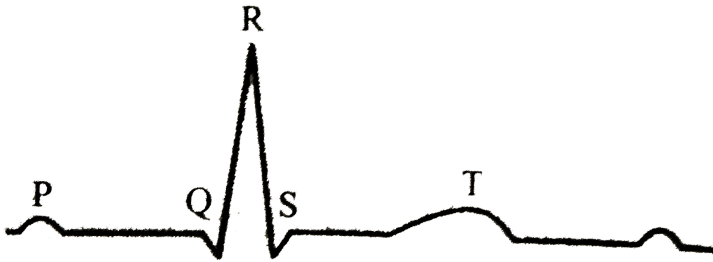
**Answer: D**



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

correctly interpreted below ?



A. Complex QRS - One complete Pulse

B. Peak T-Initiation of total cardiac contraction

C. Peak P and R together - Systolic and diastolic blood pressures

D. Peak P-Initiation of left atrial contraction only

**Answer: B**



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**6.** Globulins contained in human blood plasma are primarily involved in

- A. Clotting of blood
- B. Defence mechanisms of body
- C. Osmotic balance of body fluids
- D. Oxygen transport in the blood

**Answer: B**



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

- A. P-depolarisation of the atria
- B. R-repolarisation of ventricles
- C. S-start of systole
- D. T-end of diastole

**Answer: A**



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**8. There is no DNA in**

A. Hair root

B. An enucleated ovum

C. Mature RBCs

D. A mature spermatozoan

**Answer: C**



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9. Compared to blood our lymph has

- A. More RBCs and less WBCs
- B. No plasma
- C. Plasma without proteins
- D. More WBCs and no RBCs

**Answer: D**



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10. Which one of the following plasma proteins is involved in coagulation of blood ?

A. Fibrinogen

B. an albumin

C. serum amylase

D. a globulin

**Answer: A**



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11. 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**



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**12.** A person with unknown blood group under ABO system, has suffered much blood loss in an accident and needs immediate blood transfusion. His one friend who has a valid certificate of his own blood type , offers for blood donation without delay. 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**



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**13.** 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 aorta will be slowed down

B. The pacemaker will stop working

C. The blood will tend to flow back into the left atrium

D. The flow of blood into the pulmonary artery will be reduced.

**Answer: D**



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**14.** Which two of the following changes (i-iv) usually tend to occur in the plain dwellers when they move to high altitudes (3500 m or more )

(i) Increase in red blood cell size

(ii) Increase in red blood cell production

(iii) Increased breathing rate

(iv) Increase in thrombocyte count

A. (b) and (c )

B. (c ) and (d)

C. (a) and (d)

D. (a) and (b)

**Answer: A**



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**15.** Bundle of His' is a part of which one of the following organs in humans ?

A. Brain

B. Heart

C. Kideny

D. Pancreas

**Answer: B**



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**16.** Arteries are best defined as the vessels which

A. Supply oxygenated blood to different organs

B. Break up into capillaries which reunite to from a vein

C. Break up into capillaries which reunite to from a artery

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

**Answer: B**



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

A. Blood group O

B. Blood group A

C. Blood group B

D. Blood group AB

**Answer: A**



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

A. both A and 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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**19.** How do parasympathetic neural signals affect the working of 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

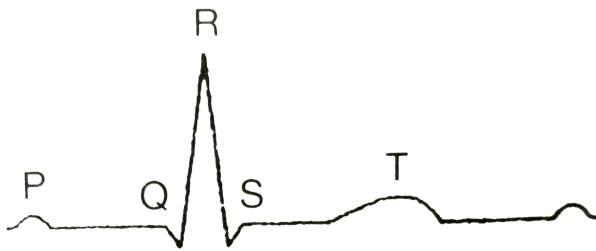
D. Heart rate decreases but cardiac output increases.

**Answer: A**



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20. 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**



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**21.** Figure shows schematic plan of blood circulation in humans with labels A to Z. Identify the label and give its functions



A. B-Pulmonary artery-takes blood from heart to lungs,  $p_{O_2} = 90$  mm Hg

B. C-Vena Cava - takes blood from body parts to right auricle,  $p_{CO_2} = 45$  mm Hg

C. D-Dorsal aorta - takes blood from heart to body parts,  $p_{O_2} = 95$  mm Hg

D. A-Pulmonary vein-takes impure blood from body parts,  $p_{O_2} = 60$  mm Hg

**Answer: B**



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22. 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**



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**23.** Erythropoiesis starts in

A. Red bone marrow

B. Kidney

C. Liver

D. Spleen

**Answer: A**



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24. 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**



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25. Which one of the following animals has two separate circulatory pathways /

A. Shark

B. Frog

C. Lizard

D. Whale

**Answer: D**



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**26.** Doctors use stethoscope to hear the sounds produced during each cardiac cycle.

The second sound is heard when

A. AV node receives signal from SA node

B. AV valves open up

C. Ventricular walls vibrate due to gushing  
of blood from atria

D. Semilunar valves close down after the  
blood flows into vessels from ventricles

**Answer: D**



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**27.** Reduction in pH of blood will

- A. reduce the rate of heart beat.
- B. reduce the blood supply to the brain.
- C. decrease the affinity of hemoglobin with oxygen.
- D. release bicarbonate ions by the liver.

**Answer: C**



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**28.** Blood pressure in the pulmonary artery is

A. same as that in the aorta.

B. more than that in the carotid.

C. more than that in the pulmonary vein.

D. less than that in the venae cavae.

**Answer: C**



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

- A. Neutrophils
- B. Thrombocytes
- C. Erthrocytes
- D. Leucocytes

**Answer: B**



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**30.** Serum differs from blood in

- A. Lacking clotting factors
- B. Lacking antibodies
- C. Lacking globulins
- D. Lacking albumins

**Answer: A**



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