

OLYMPIAD Champs

Transportation in Animals and Plants

Exercise - 1

Multiple Choice Questions

DIRECTIONS: The following questions have four choices (a), (b), (c) and (d) out of which only one is correct. You have to choose the correct alternative.

- 1. The aroma of food comes from the kitchen because of-
 - (a) Osmosis (b) Diffusion
 - (c) Convection (d) Fragmentation
- One of our body organs is used to filter waste products of the blood.
 (a) Heart
 (b) Lungs
 (c) Kidney
 (d) Stomach
- **3.** A kidney, ureter and urinary bladder together are called-
 - (a) Respiratory system
 - (b) Excretory system
 - (c) Circulatory system
 - (d) Reproductive system
- 4. Cardiovascular system is also known as
 (a) Digestive system
 (b) Excretory system
 (c) Circulatory system
 (d) Nervous system
- 5. The part of blood which does not have a nucleus.
 (a) RBC
 (b) WBC
 (c) Platelets
 (d) Plasma
- 6. The vascular tissue which conducts food to various plant parts is the
 (a) Xylem
 (b) Phloem
 (c) both of these
 (d) none of these
- **7.** The pulmonary arteries carry
 - (a) pure blood
 - (b) impure blood
 - (c) blood to kidney
 - (d) blood from the kidney
- 8. The blood vessel which carries blood from lungs to heart is called(a) Pulmonary artery(b) Coronary artery
 - (c) Renal artery (d) Pulmonary artery (d) Pulmonary vein

- 9. Select the type of cells, present in blood, whose main function is to fight against diseases by destroying harmful bacteria and other foreign material.
 (a) RBC
 (b) WBC
 (c) Platelets
 (d) none of these
- 10. The process by which the oxygenated blood moves from left auride to left ventricle and then through aorta to all parts of the body is known as
 (a) Extracellular circulation
 (b) Pulmonary circulation
 - (c) Systemic circulation
 - (d) Intracellular circulation
- Which of the following is responsible for the red colour of red blood cells?
 (a) blood
 (b) Haemoglobin
 (c) platelets
 (d) none of these
- 12. Select the one that is a small muscular balloon like organ, which swells up when it is fall of urine and shrinks in size again after urine has been emptied out of it.
 (a) ureter
 (b) urinary bladder
 (c) urethra
 (d) none of these
- 13. Which of the following plays the major role in clotting of blood?(a) RBC(b) WBC
 - (c) Platelets (d) none of these
- 14. The clotting of blood is to

 (a) Slow down the movement of blood inside the blood vessel.
 (b) trap oxygen inside the blood so that it may be transported more easily.
 (c) seal up wounds to avoid loss of blood
 (d) all the above are correct

 15. Which of the following groups represent correctly the substances that the capillaries exchange between blood and tissues?

 (a) oxygen, carbon dioxide, RBC, food
 (b) Oxygen, carbon dioxide, food, waste products
 - (c) water, plasma, WBC, RBC
 - (d) Oxygen, carbondioxide, WBC, RBC

16. Which of the following mechanisms is not used by human beings for excretion of waste materials from their bodies?

(a) Exhalation	(b) Perspiration
(c) Defecation	(d) Transfusion

- 17. By whom was the circulation of blood discovered?
 (a) Galileo Galilie
 (b) William Harvey
 (c) Both of these
 (d) none of these
- 18. In plants which of the following is used for absorption of water?
 (a) Xylem
 (b) phloem
 (c) stomata
 (d) root hair
- **19.** The transportation of water takes place through a large spaced potato cavity filled with sugar solution placed in a dish containing small amount of water?
 - (a) Xylem
 - (b) Phloem
 - (c) through movement of one cell to another
 - (d) none of these
- 20. The process of filtering the waste containing body fluids is carried out by blood capillaries in which of the following parts of our body?
 (a) urinary bladder
 (b) kidneys
 (c) trachea
 (d) atria
- **21.** The blood that flows from lungs to heart is bright red, because
 - (a) it is made red by oxygen
 - (b) it is made red by carbondioxide
 - (c) it is made red by gastric juices $% \left(\left({{{\mathbf{x}}_{i}}} \right) \right) = \left({{{\mathbf{x}}_{i}}} \right) \left({{{\mathbf{x}}_{i}}} \right)$

(d) the lungs add a pigmient (dye) to blood as it flows through them

- **22.** The heart rate of an adult is (a) 60-65 per minute (b) 70-80 per minute (c) 40-60 per minute (d) none of these
- **23.** Root hairs are of utmost importance to the plant because
 - (a) they provide anchorage
 - (b) they provide much absorptive surface

(c) they are the centres of cell division and growth $% \left({{{\bf{r}}_{{\rm{s}}}}} \right)$

- (d) they are the areas where root grows.
- **24.** An instrument for measuring rate of transpiration is a
 - (a) potometer (b) klinometer
 - (c) hygrometer (d) osmometer

- 25. Oxygen is carried to the tissues of an insect by (a) blood (b) gills (c) lungs (d) trachea 26. Which of the following is a tissue and not an organ? (a) Kidney (b) Stretched muscle (c) Liver (d) Spleen 27. The greatest effort of the heart is exerted by the (b) right ventricle (a) right auricle (c) left auricle (d) left ventricle 28. Arterial blood may be distinguished from venous blood because the latter is (a) a dull red (b) a brighter red (c) thicker (d) thinner 29. A pulse at the wrist is detected in a (a) systemic vein (b) systemic artery (c) pulmonary vein (d) Pulmonary artery 30. The name of the tube which leads from kidney to the urinary bladder is (a) uriniferous tubule (b) urethra (c) ureter (d) none of these 31. Reproduction is described as a phenomenon by which of these options? (a) increase in size (b) increase in number (c) form new tissues and organs (d) develop from zygotes 32. It is present in the respiratory system of insects, fish and mammals. It is (a) spirades (b) tracheae (d) all of these (c) a thin moist surface
 - 33. It is produced when muscle cells respire anaerobically. Its accumulation causes cramps. It is
 (a) Alcohol
 (b) Tartaric acid
 (c) Lactic acid
 (d) Oxalic acid
- 34. These are tiny, irregular, star shaped structures that have no nuclei but they play an important roll in clotting of blood. These are

 (a) RBC
 (b) WBC
 (c) Platelets
 (d) Plasma

35. It generates a force which pulls up water absorbed by the roots from the soil to reach the stem and leaves. It is (a) transpiration (b) transportation

(a) transpiration	(0) transportation
(c) stomata	(d) none of these

36. It is a part of our circulatory system and is situated in our chest cavity. It is (a) blood

(a) 01000	(O) nearl
(c) kidney	(d) none of these

37. The main organ of excretory system through which waste material (in the form of urine) is eliminated from the body. It is (a) kidney (b) sweat gland

(c) urine	(d) all of these
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- **38.** Plasma is
 - (a) blood
 - (b) fluid part of blood
 - (c) red pigment present in blood
 - (d) none of these
- 39. Arteries are a type of blood vessel
 (a) which carry oxygen rich blood from the heart to all other parts of the body.
 (b) which carry deoxygenated blood from the heart to all other parts of the body.
 (c) which carry deoxygenated blood and have

thick elastic units.

- (d) none of the above is correct.
- **40.** Stethoscope is a device that is used by doctors to (a) amplify the sound of the heart
 - (b) check for diseases a patient is suffering from

(c) to check for any type of infection in the body of the patient

(d) all the above are correct

Match the Column

DIRECTIONS: Match column I with column II and select the correct answer using the code given below the columns

41.

	Column-I		Column-II
(a)]	Deoxygenated	blood	(i) Right auricle
from l	body flows to it		
(b)	Deoxygenated	bood	(ii) Right ventricle
from i	it flows to lungs		
(c) O:	xygenated blood	d from	(iii) Left auricle
lungs	flow to it		

(d) Oxygenated blood form	(iv) Left ventricle	
it flows to body		
(a) (a) \rightarrow (i),(B) \rightarrow (ii),(C) \rightarrow (iii),(D) \rightarrow (iv)		
(b) (a) \rightarrow (ii),(B) \rightarrow (i),(C) \rightarrow (iii),(D) \rightarrow (iv)		

(c) (a) \rightarrow (i),(B) \rightarrow (ii),(C) \rightarrow (iv),(D) \rightarrow (iii) (d) (a) \rightarrow (ii),(B) \rightarrow (i),(C) \rightarrow (iv),(D) \rightarrow (iii)

42.

Column-I	Column-II
(a) Xylem	(i) transpiration
(b) Pholem	(ii) transport of food
(c) Root hairs	(iii) transport of water
(d) Stomata	(iv) Absorption of water
(a) (a) \rightarrow (i),(B) \rightarrow (ii),(0)	$C) \rightarrow (iii), (D) \rightarrow (iv)$
(b) (a) \rightarrow (ii),(B) \rightarrow (iii),(C) \rightarrow (i),(D) \rightarrow (iv)	
(c) (a) \rightarrow (iii),(B) \rightarrow (ii),(C) \rightarrow (iv),(D) \rightarrow (i)	
(d) (a) \rightarrow (iii),(B) \rightarrow (ii),(C) \rightarrow (i),(D) \rightarrow (iv)	

43.

Column-I	Column-II
(a) Plasma	(i) Blood vessel
(b) Hemoglobin	(ii) fluid part of blood
(c) Platelets	(iii) Binds with oxygen and
	transports it to all parts of
	the body
(d) Artery	(iv) help in formation of clot
(a) (a) \rightarrow (i),(B) \rightarrow (ii),(C) \rightarrow (iii),(D) \rightarrow (iv)	
(b) (a) \rightarrow (ii),(B) \rightarrow (iii),(C) \rightarrow (iv),(D) \rightarrow (i)	
(c) (a) \rightarrow (iii),(B) \rightarrow (iv),(C) \rightarrow (i),(D) \rightarrow (ii)	
(d) (a) \rightarrow (iv),(B) \rightarrow	$(i), (C) \rightarrow (ii), (D) \rightarrow (iii)$

44.

Column-I	Column-II
(a) Kidneys	(p) Air
(b) Heart	(q) Food
(c) Lungs	(r) Blood
(d) Stomach	(s) Wastes
(a) (a) \rightarrow (p),(B) \rightarrow (r),(C	$() \rightarrow (s), (D) \rightarrow (q)$
(b) (a) \rightarrow (s),(B) \rightarrow (r),(C) \rightarrow (p),(D) \rightarrow (q)	
(c) (a) \rightarrow (r),(B) \rightarrow (p),(C) \rightarrow (s),(D) \rightarrow (q)	
(d) (a) \rightarrow (q),(B) \rightarrow (s),(C) \rightarrow (p),(D) \rightarrow (r)	

Passage Based Questions

DIRECTIONS: Read the Passage (s) given below and answer the questions that follow.

Passage – 1

Our blood consists of various types of cells. It is a liquid which has various types of cells suspended in it. It contains RBC, WBC, plasma and

platelets. They have different functions to perform.

- 45. Which of the following contains the pigment that binds oxygen and transports it to all parts of the body?
 (a) RBC
 (b) WBC
 (c) Plasma
 (d) platelets
- 46. Which component of blood helps to fight against germs that may enter our body?
 (a) RBC
 (b) WBC
 (c) both of these
 (d) none of these
- **47.** The fluid part of blood is called (a) plasma (b) platelets (c) both of these (d) none of these

Passage - 2

Plants have pipe-like vessels made up of special cells, forming the vascular tissues, for transport of water and nutrients from the soil. These vascular tissues are called xylem. The transportation of food is done by vascular tissues called phloem.

- 48. Which of the following are involved in transport of substances in plants?
 (a) Xylem
 (b) Phloem
 (c) both of these
 (d) none of these
- 49. The vascular tissue for transport of water and nutrients in plants is called
 (a) Xylem
 (b) Phloem
 (c) both of these
 (d) none of these
- 50. The continuous network of channels that connects roots to the leaves through the stem and branches is

 (a) root hair
 (b) xylem
 (c) phloem
 (d) all of these

Passage - 3

The evaporation of water from leaves generates a suction pull which can pull water to great heights in tall trees.

51. What is the name of the process described in the passage?

(a) Evaporation	(b) Suction
(c) Transpiration	(d) Transportation

- **52.** Movement of sap through the plant is facilitated by
 - (a) absorption by roots
 - (b) gravitational force
 - (c) transpiration pull and absorption by roots
 - (d) height of sap
- 53. Water and minerals move to other parts of plant through

 (a) xylem
 (b) phloem
 (c) blood vessels
 (d) stomata

Passage – 4

The main organ of the human excretory system through which waste material is eliminated from the body is kidney.

- **54.** What is the major excretory product in humans? (a) Sweat (b) water (c) urea (d) salt
- **55.** Sweat contains (a) urea (b) sodium chloride (c) water (d) all of these
- 56. Which of the following is used as artificial kidney in kidney failure patients?
 (a) Dialysis
 (b) Filter
 (c) Angiogram
 (d) Ventilation

Assertion/ Reason Based Questions

DIRECTIONS: The questions in this segment consists of two statements, one labelled as "Assertion A" and the other labelled as "Reason R). You are to examine these two statements carefully and decide if the Assertion A and Reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these items using codes given below

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

- (c) A is true but R is false.
- (d) A is false but R is true.
- **57.** Assertion (A): Heart is a tissue which acts as a pump. Reason (R): Heart is roughly the size of your fist.
- **58.** Assertion (A): The rhythmic beating of various chambers of the heart maintain circulation of blood.

Reason (R): Pulse rate per minute indicates the rate of heartbeat.

- **59.** Assertion (A): Animals like sponges and Hydra do not possess any fluid like blood. Reason (R): Sponges and Hydra lack a circulatory system.
- **60.** Assertion (A): Several droplets of water are seen on the edges of leaves of roses in the morning. Reason (R): We give water to rose plants and some water falls on the leaves.

Statement Based Questions

DIRECTIONS: Read the following two statements carefully and choose the correct options.

(a) Statement (i) is correct while statement (ii) is incorrect.

(b) Statement (ii) is correct while statement (i) is incorrect.

- (c) Both statements are correct
- (d) Both statements are incorrect.
- 61. (i) Arteries have no muscular walls(ii) Veins carry blood from different parts of the body to the heart.
- 62. (i) Ureters connect the kidneys to the urinary bladder.(ii) Ureters filter the blood and collect wastes in kidneys.
- 63. (i) Sap contains water, plasma and minerals(ii) Transport system in most autotrophs is blood circulation.
- 64. (i) In unicellular organisms transportation occur by diffusion and streaming movements of the cytoplasm.
 (ii) Humans beings transport nutrients, gases etc by blood.

Figure Based Questions

DIRECTIONS: On the basis of following diagram/ picture answer the questions given below:

65. The figure given below represents human excretory system. Identify the labeled part in which urine is stored.



Study the following diagram carefully and answer the following questions.



- **66.** Name the parts of the heart labeled A and B in the diagram.
 - (a) A = left atrium, B = valve
 - (b) A = septum, B = right ventricle
 - (c) A = right atrium, B = aorta
 - (d) A = left atrium, B = septum
- **67.** How many times does the average adult heart beat per minute while at rest?
 - (a) 40 (b) 120 (c) 70 (d) 90

68. A pulse is caused by

- (a) the valves in an artery opening and closing
- (b) oxygen entering the blood in the lungs
- (c) changes in blood pressure in an artery

(d) red blood cells colliding with each other in the arteries

69. A stick of celery is left in a beaker containing a solution of blue food colouring. After two days, the celery is taken out and it is seen that parts of the celery have turned blue. What is the name given to the blue part of the plant?



Exercise -2

Multiple Choice Questions

DIRECTIONS: The following questions has four choices (a), (b), (c) and (d) out of which only one is correct. You have to choose the correct alternative.

- 1. An organ which pumps deoxygenated blood to the lungs and oxygenated blood to the body.
 - (a) Kidney (b) Heart
 - (c) Lung (d) Vein
- 2. In flatworms like Helicometra the circulator system is
 - (a) Open circulatory system
 - (b) Closed circularly system
 - (c) Absent
 - (d) None of the above
- 3. Heart is four chambered in case of-(a) Aves and mammals (b) Amphibians (c) Reptilians (d) Cephalopods
- **4**. Which is protein part of the blood (a) Erythrocytes (b) Leukocytes (c) Platelets (d) Plasma
- A genetic illness that causes a disinfection in one **5**. of the blood clotting mechanism (a) Anemia (b) Hemophilia (d) Thrombophilia (c) Leukemia
- 6. A fibrous, non-globular protein which is involved in the clotting mechanism-
 - (a) Anemia (b) Hemophilia
 - (c) Leukemia (d) Thrombophilia
- 7. Mummy has put some grain seeds in a tumbler and poured some water on it in the night. In the morning she saw that gram seeds has swollen up. Can you say why this has happened?
 - (a) because of osmosis
 - (b) because of turgor pressure
 - (c) because of diffusion
 - (d) because of transpiration
- 8. These have thin and elastic walls-(a) Arteries (b) Veins
 - (d) Superior vena cava (c) Capillaries
- 9. Relaxation of the heart muscle is called as
 - (b) Pulse (a) Diastole
 - (c) Systole (d) Heartbeat

- 10. Ammonotelism is basically found in which type of animals-(a) Mammals (b) Aves (c) Aquatic (d) Reptilia
- 11. Mineral, water, lactate and urea are present in-(b) Our kidnev (a) Our sweat (c) Out lungs (d) Our ureter
- 12. Mesoglea is present in-(a) Sponges (b) Hydra (c) Spirogyra (d) Vaucheria
- 13. Which part of the blood transport the waste product urea from the liver to the kidney. (a) Red Blood cells (b) White Blood cells (c) Plasma (d) Platelets
- 14. Throbbing that occurs in arteries due to flowing of blood is called as-(a) heart beat
 - (b) pulse
 - (c) blood circulation
 - (d) pulmonary circulation
- 15. An opening in xylem vessel through which lot of water can pass through. (a) Lignin (b) Lumen
 - (c) Lamella (d) Stomata
- 16. An elongated, tube like dead cell with thick and lignified wall which possess large cell cavity. (a) plasmodesmata (b) Tracheids (c) xylem vessel (d) sieve tube
- 17. The process of carrying food material from leaf to different parts of the plant is called -(b) Transpiration (a) Transportation (c) Translocation (d) Diffusion
- 18. Agranulocytes and Granulocytes are those having nuclei. Can you tell these are parts of which type of blood? (a) Leukocytes (b) Erythrocytes (c) Thrombocytes (d) Blood platelet
- 19. Dead, complex permanent tissue present in the plant. (a) Phloem vessel (b) Xylem vessel (c) Sieve tube
 - (d) Companion cell

- 20. Nitrogen, phosphorus, potassium, sulphur are some nutrients which plants get from the soil. These nutrients are called _____.
 (a) Micronutrients (b) Macronutrients
 - (c) Minerals (d) Carbohydrates
- **21.** Which type of pressure is responsible for the rise of water to some height?
 - (a) Turgor pressure
 - (b) Root pressure
 - (c) Osmotic pressure
 - (d) Atmospheric pressure
- **22.** Tell the arrangement in which phloem is surrounded by a ring of xylem vessel.
 - (a) collateral (b) Bicollateral







23. In between xylem and phloem there is a layer called _____.

(a) Meristem	(b) Medulla
(c) Cambium	(d) Midrib

24. In sieve tube of phloem which sugar is dissolved in H_2O to form sap

(a) Fructose	(b) Glucose
(c) Sucrose	(d) Cellulose

- **25.** Why is blood that flows from lungs to the heart bright red rather than dark red?
 - (a) CO_2 makes it red
 - (b) Oxygen makes it red
 - (c) Gastric juices make it red
 - (d) Lungs add a pigment to blood

Match the Column

DIRECTION: Match Column I with column II and select the correct answers using the code given below the columns

26.

Column-I	Column-II
(a) RBC	(p) clotting
(b) WBC	(q) transportation
(c) Platelets	(r) Carries $O_2 \& CO_2$
(d) plasma	(s) protects the body

(a) (a) \rightarrow (s),(B) \rightarrow (p),(C) \rightarrow (q),(D) \rightarrow (r) (b) (a) \rightarrow (p),(B) \rightarrow (r),(C) \rightarrow (s),(D) \rightarrow (q) (c) (a) \rightarrow (q),(B) \rightarrow (p),(C) \rightarrow (r),(D) \rightarrow (s) (d) (a) \rightarrow (r),(B) \rightarrow (s),(C) \rightarrow (p),(D) \rightarrow (q)

27.

Column-I	Column-II
(a) Nephrons	(p) heart
(b) auricle	(q) urinary bladder
(c) xylem	(r) Kidney
(d) urine	(s) Plant
(a) (a) \rightarrow (r),(B) \rightarrow (p),(C	$(a) \rightarrow (s), (D) \rightarrow (q)$
(b) (a) \rightarrow (q),(B) \rightarrow (r),(C	$(z) \rightarrow (p), (D) \rightarrow (s)$
(c) (a) \rightarrow (p),(B) \rightarrow (q),(C	$C) \rightarrow (s), (D) \rightarrow (r)$
(d) (a) \rightarrow (r),(B) \rightarrow (q),(C	$(z) \rightarrow (s), (D) \rightarrow (p)$

28.

Column-I	Column-II	
(a) RBC	(p) fist size	
(b) urinary bladder	(q) bean shaped	
(c) Kidney	(r) balloon shaped	
(d) Heart (s) disc shaped		
(a) (a) \rightarrow (q),(B) \rightarrow (r),(C	$(z) \rightarrow (s), (D) \rightarrow (p)$	
(b) (a) \rightarrow (s),(B) \rightarrow (q),(C) \rightarrow (s),(D) \rightarrow (q)		
(c) (a) \rightarrow (s),(B) \rightarrow (r),(C) \rightarrow (q),(D) \rightarrow (p)		
(d) (a) \rightarrow (p),(B) \rightarrow (q),(C	$C \rightarrow (r), (D) \rightarrow (s)$	

29.

Column-I	Column-II
(a) xylem	(p) companion cells
(b) phloem	(q) root hairs
(c) Stomata	(r) tracheids
(d) Root	(s) guard cells
(a) (a) \rightarrow (s),(B) \rightarrow (r),(C)	$) \rightarrow (p), (D) \rightarrow (q)$
(b) (a) \rightarrow (r),(B) \rightarrow (p),(C	$(z) \rightarrow (s), (D) \rightarrow (q)$
(c) (a) \rightarrow (q),(B) \rightarrow (s),(C	$) \rightarrow (r), (D) \rightarrow (p)$
(d) (a) \rightarrow (p),(B) \rightarrow (q),(C	$C) \rightarrow (s), (D) \rightarrow (r)$

Passage Based Questions

DIRECTIONS: Read the passage (s) given below and answer the questions that follow

Passage – 1

Heart is an organ which beats continuously to act as a pump for transport of blood, which carries other substances. The heart is located in the chest cavity with its lower tip slightly tilted towards the left. Your heart is roughly the size of your fist.

- **30.** To avoid the mixing of blood rich in oxygen and the blood rich in carbon dioxide, the heart has (a) two atria (b) two ventricles (c) four chambers (d) none of these
- **31.** When arteries reach the tissues, they divide into (a) capillaries (b) tubules (c) veins (d) none of these
- **32.** Pulse is due to
 - (a) blood flowing is arteries
 - (b) blood flowing in veins
 - (c) blood flowing through capillaries
 - (d) none of these

Passage - 2

The process of waste disposal or removal of wastes is called excretion. In plants, water and salts are absorbed by roots and carried by xylem. Plants store some waste products. These are useful to us.

33.	Where do plants store their wastes?		
	(a) Old leaves	(b) Vacuoles	
	(c) Both (a) and (b)	(d) None of these	

- 34. The cause of movement of water against gravity in a plant is
 (a) Osmosis
 (b) photosynthesis
 (c) transpiration
 (d) excretion
- **35.** The solution of minerals, water, food and gases that is carried through xylem and phloem is called (a) sol (b) Sap
 - (c) cytoplasm (d) protoplasm

Passage - 3

Excretory system varies in different animals some animals live in water and so their waste product is ammonia which directly dissolve in water.

- 36. Which animals excrete wastes in the form of ammonia?(a) humans(b) birds
 - (c) fish (d) all of these
- **37.** What is the major excretory product in humans? (a) uric acid (b) urea (c) ammonia (d) All of these

38. Where are kidneys located in humans?
(a) chest
(b) abdomen
(c) hands
(d) left side of the body

Assertion/ Reason Based Questions

DIRECTIONS: The questions in this segment consists of two statements, one labeled as "Assertion A" f and the other labeled as "Reason R". You are to examine these two statements carefully and decide if the Assertion A and Reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these items using codes given below.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A, $\label{eq:area}$

- (c) A is true but R is false.
- (d) A is false but R is true.
- **39.** Assertion (A): Circulatory system consists of the heart, the lungs and blood vessels. Reason (R): Blood is a fluid which flows in blood vessels.
- **40.** Assertion (A): Arteries have a thick elastic wall. Reason (R): In arteries blood flow is rapid and at high pressure
- **41.** Assertion (A): Pulmonary artery carries impure blood to the lungs Reason (R): Pulmonary vein carries impure blood from lungs to heart.
- **42.** Assertion (A): water absorbed by roots from the soil reaches the top oft all trees. Reason (R): The force generated during transpiration helps to pull the water up.

Statement Based Questions

DIRECITONS: Read the following three statements and choose the correct answer.

(a) Statement (i) and (iii) are incorrect but (ii) is correct

(b) Statement (i) and (ii) are incorrect but (iii) is correct

- (c) All statements are correct
- (d) All statements are incorrect

43. (i) Lower chambers of the heart are called auricles(ii) Upper chambers of the heart are called ventricles.

(iii) These are no values in a heart.

- (i) Gas exchange in the alveoli happens through capilaries.
 (ii) Oxygenated blood is pumped to all other parts of the body from left ventricle.
 (iii) Arteries have thicker walls than veins
- **45.** (i) Calcium is needed for haemoglobin formation (ii) R B Cs is red due to haemoglobin (iii) Purtain part in haemoglobin

(iii) Protein part in haemoglobin is haeme

Figure Based Question

DIRECTIONS: On the basis of following diagram/ picture answer the questions given below.

(Qs. 46-49) Look at the following diagram and answer the following questions.



- **46.** A in this diagram indicates which of the following?
 - (a) Aorta
 - (b) vein
 - (c) Pulmonary artery
 - (d) Pulmonary vein
- 47. B in this diagram indicates which of the following?(a) veins(b) Aorta(c) D to the following of the foll
 - (c) Pulmonary artery (d) Pulmonary vein
- **48.** Look at the following diagram. Identify the parts labeled as P and Q.



- (a) P = urethr, Q = renal vein
- (b) P = urethra, Q = bladder
- (c) P= urethra, Q= renal vein
- (d) P= ureter, Q= kidney

49. A pupil did an experiment to investigate the loss of water by plants. The apparatus that she used is shown in the diagram.

The rate at which the water level fell (water loss) in the measuring cylinder was measured at regular time intervals, (i) for a plant without the hair dryer, (ii) for a plant with a hair dryer blowing warm air over the leaves, and (iii) fora plant with a hair dryer blowing cool air over the leaves. The pupil used the data to draw the graph shown.

Match up the three graphs with their corresponding conditions



- (a) A= warm air, B = normal, C = cool air
- (b) A = normal, B = cool air, C = warm air
- (c) A = cool air, B = normal, C = = warm air
- (d) A= normal, B= warm air, C== cool air

OLYMPIAD Champs

	Hints & Solutions	23.
	Exercise – 1	24.
	Multiple Choice Questions	
1.	(b)	25.
2.	(c)	26.
3.	(b)	27.
4.	(c)	28.
5.	(a)	29.
6.	(b) Xylem transports water and nutrients and not food.	30.
7.	(b)	31.
8.	(d)	32.
9.	(b) WBC	33.
10	(d) It is called intracellular circulation	34.
10.		35.
11.	(b) The red colour is due to presence of haemoglobin.	36.
12.	(b)	37.
13.	(c)	38.
14.	(c)	39.
15.	(b)	40.
16.	(d) Transfusion is not an excretory mechanism.	
17.	(b)	41.
18.	(d) Root hair increases the area for absorption of water.	42. 43.
19.	(c)	44.
20.	(b)	
21.	(a)	45.
22.	(b)	46.

23.	(b)
24.	(a) Photometer is used to measure rate of transpiration.
25.	(d)
26.	(b) All other options are organs.
27.	(d)
28.	(a)
29.	(b) It is detected in a systemic artery.
30.	(c)
31.	(b)
32.	(c)
33.	(c)
34.	(c)
35.	(a)
36.	(b)
37.	(a)
38.	(b)
39.	(a)
40.	(a)
	Match the Column
41.	(c)
42 .	(c)
43.	(c)
44.	(b)
	Passage Based Questions
45.	In RBC hemoglobin is present.

WBC helps to fight against germs.

47.	The fluid part of blood is called plasma.	69.	(d)
48 .	Both xylem and phloem are involved in transport of substance in plants.		Multir
49.	Xylem.	1.	(b)
50.	Xylem.	2.	(c)
51.	(c)	3.	(a)
52.	(c)	4.	(d)
53.	(a)	5.	(b)
54.	(c)	6.	(b)
55.	(d)	7.	(a)
56.	(a)	8.	(b)
	Assertion/Reason Based Questions	9.	(a)
57.	Heart is an organ, so the given statement under	10.	(c)
	assertion A is incorrect.	11.	(a)
58 .	(b)	12.	(b)
59.	(a)	13.	(c)
60.	(b)	14.	(b)
	Statement Based Question	15.	(b)
61.	(b)	16.	(b)
62.	(a)	17.	(c)
63.	Sap contains water, minerals and food. In	18.	(a)
	autotrophs transport system is through xylem and phloem.	19.	(b)
64.	(c)	20.	(b)
	Figure Based Questions	21.	(b)
65.	(b)	22.	(d)
66.	(d)	23.	(c)
67.	(c)	24.	(c)
68.	(a)	25.	(b)

	EXERCISE – 2	
	Multiple Choice Questions	
1.	(b)	
2.	(c)	
3.	(a)	
4.	(d)	
5.	(b)	
6.	(b)	
7.	(a)	
8.	(b)	
9.	(a)	
10.	(c)	
11.	(a)	
12.	(b)	
13.	(c)	
14.	(b)	
15.	(b)	
16.	(b)	
17.	(c)	
18.	(a)	
19.	(b)	
20.	(b)	
21.	(b)	
22.	(d)	
23.	(c)	
24 .	(c)	

Match the column

- **26.** (d)
- **27.** (a)
- **28.** (c)
- **29.** (b)

Passage Based Questions

- **30.** (c) Heart has four chambers and the partition between them helps to avoid mixing of two types of blood.
- **31.** (a) They divide into capillaries.
- **32.** (a) Pulse is due to blood flowing in arteries.
- **33.** (c)
- **34.** (c)
- **35.** (b)
- **36.** (b)
- **37.** (b)
- **38.** (b)

Assertion/Reason Based Questions

- **39.** (b) Both correct but Reason R is not the correct explanation of assertion A.
- **40.** (a) Both correct and Reason R is correct explanation of assertion A.
- **41.** (c) The statement given in Reason R is incorrect.
- **42.** (a)

Statement Based Questions

- **43.** (d) Lower chambers are ventricles and upper chambers are auricles.
- **44.** (c)
- **45.** (a) Protein part is globins. Iron is needed for hemoglobin formation.

Figure Based Questions

- **46.** (d) It is pulmonary vein. It carries oxygenated blood form lungs to heart.
- **47.** (a) It is veins as they carry deoxygenated blood from body to heart.
- **48.** (c)
- **49.** (c) Rate of transpiration will be maximum when in warm air and least in cool air.