

## Objective

1. A contractile pumping device:
 

(A) Vein       (B) Heart       (C) Liver       (D) Lung
2. The open circulatory system is present in:
 

(A) *Runa tigrina*       (B) *Amphioxus*       (C) *Pheretima*       (D) *Periplaneta*
3. Normal pH of human blood is:
 

(A) 6.4       (B) 5.4       (C) 4.4       (D) 7.4
4. Which of the following is not true about histamine?
 

(A) Cause inflammation       (B) Produced by basophils  
 (C) Causes dilation of blood capillaries       (D) Released by Eosinophils
5. Platelets are fragments of large cells called:
 

(A) Erythrocytes       (B) Microkaryocytes       (C) Leucocytes       (D) Megakaryocytes
6. One cubic millimeter of human male blood contain RBC:
 

(A) 6 - 6.5 millions       (B) 5 - 5.5 millions       (C) 7 - 7.5 millions       (D) 4 - 4.5 millions
7. In the embryonic life the red blood cells are formed in:
 

(A) Liver and spleen       (B) Red bone marrow  
 (C) In bone marrow of sternum and ribs       (D) Bone marrow of vertebrae
8. The plasma proteins constitute percent by weight of plasma:
 

(A) 13 - 15 %       (B) 11 - 13 %       (C) 9 - 11 %       (D) 7 - 9 %
9. The mammalian red blood cells are:
 

(A) Concave       (B) Biconcave       (C) Convex       (D) Biconvex
10. Histamine is produced by:
 

(A) Monocytes       (B) Eosinophils       (C) Basophils       (D) Neutrophils
11. Closed circulatory system is observed in animals belonging to annelids, cephalopod molluscs (squids and octopus), echinoderms and:
 

(A) Mollusca       (B) Vertebrates       (C) Tunicates       (D) None of these
12. Closed circulatory system have respiratory pigment:
 

(A) Haemocyanin       (B) Both A & D       (C) None of these       (D) Haemoglobin
13. The uncontrolled production of white blood cells result in:
 

(A) Thalassemia       (B) Leukaemia       (C) Asthma       (D) Oedema
14. Thalassemia is also called:
 

(A) Mendel's anaemia       (B) Thomas anaemia       (C) Cooley's anaemia       (D) Peter's anaemia
15. Enlargement of spleen is seen in:
 

(A) Oedema       (B) Hepatitis       (C) Thalassemia       (D) Blood cancer
16. .... is employed in treatment of cancer:

- (A) Gene therapy (B) Chemotherapy and cloning  
 (C) Radiotherapy and chemotherapy (D) Gene therapy
17. The substance which inhibits blood clotting:  
 (A) Fibrin (B) Albumin  (C) Heparin (D) Histamine
18. After a fatty meal, fat globules may make up:  
 (A) 1.5 % of the lymph (B) 15 % of the lymph  (C) 1 % of the lymph (D) 10 % of the lymph
19. The intercellular spaces in the walls of lymph vessels are ..... than those of the capillaries of blood vascular system:  
 (A) Smaller  (B) Larger (C) Both A & B (D) None of these
20. Lymph nodes are present in the ....., axilla and groin humans:  
 (A) Legs (B) Chest region  (C) Neck region (D) None of these
21. The ..... helps defend the body against invaders:  
 (A) Heart (B) Circulatory system  
 (C) Lymphatic system (D) None of these
22. Antibodies are produced from:  
 (A) Basophils (B) Monocytes (C) Eosinophils  (D) Lymphocytes
23. Antiserum is a serum containing:  
 (A) Antibiotics  (B) Antibodies (C) Anticancer chemicals (D) Antigen
24. In cell mediated response ..... recognize antigens:  
 (A) T - cells (B) B - cells (C) Lymphs (D) None of these
25. The casparian strips are present in:  
 (A) Cells of phloem (B) Endodermis cells of roots  
 (C) Cortex cells of roots (D) Cells of pericycle
26. Lymph most closely resembles with:  
 (A) Urine (B) Interstitial  (C) Plasma (D) Blood
27. Hydathodes are associated with:  
 (A) Transpiration (B) Conduction (C) None of these  (D) Guttation
28. According to pressure flow theory, which of the following serves as sink:  
 (A) Stem (B) Leaves  (C) Roots (D) None of these
29. Which of the following is true about mammals?  
 (A) They do not have aortic arch (B) They have right aortic arch only  
 (C) They have left aortic arch only (D) They have left and right aortic arches
30. The process that most likely / directly enables a root hair cell to absorb minerals by active transport and enables a muscle cell to contract is:  
 (A) Excretion (B) Assimilation  (C) Respiration (D) Circulation
31. Which of the following processes cause substances to move across membranes without the expenditure of cellular energy?  
 (A) Active transport  (B) Endocytosis (C) Diffusion (D) None of these
32. Cardiac muscle can be distinguished from other muscle fibres because cardiac muscle:

- (A) Lacks regular arrangement of sarcomas (B) Voluntary in action  
 (C) Has intercalated discs (D) Contain only action
33. Cohesion tension theory is one of the most important theories proposed by:  
 (A) Kochland (B) Robert whitlekar (C) None of these (D) Dixon
34. Transpiration provides the necessary ..... or force.  
 (A) Tension (B) Energy (C) Pressure (D) None of these
35. The total water pulled up in the leaves in transpired , except about ..... which is used by plant in various activities.  
 (A) 5 % (B) 2 % (C) 1 % (D) 10 %
36. Guard cells become turgid and stoma or pore:  
 (A) smal (B) Open (C) Close (D) None of these
- 37: ..... is incorrect about guard cells.  
 (A) Surrounding stoma (B) Bean shaped  
 (C) Connected to surrounding cells by plasmodesmata (D) Have chloroplasts
38. The ions involved in the opening and closings of stomata are:  
 (A) Calcium (B) Magnesium (C) Sodium (D) Potassium
39. Temperature causes closure of stomata:  
 (A) 25 - 35 °C (B) 40 - 45 °C (C) 30 - 35 °C (D) 30 - 40 °C
40. According to one hypothesis , stomata opens due to the active transport of:  
 (A) Nitrogen (B) Sulphur (C) Potassium (D) Sodium
41. Complex animals have evolved transport system in the form of blood vascular system or:  
 (A) Respiratory system (B) Excretory (C) Circulatory system (D) None of these
42. A circulatory fluid is the:  
 (A) Hormones (B) Secretion (C) Blood (D) Water
43. Passive immunity is developed by injecting:  
 (A) Serum (B) Antibiotic (C) Antiserum (D) Vaccine
44. The use of ..... which stimulate the production of antibodies in the body , and making a person immune.  
 (A) Antibodies (B) Antigen (C) None of these (D) Vaccines
45. Naturally induced immunity is also called:  
 (A) Passive immunity (B) Auto immune (C) Anti-serum (D) None of these
46. The plasma proteins maintain colloid osmotic pressure of the blood:  
 (A) 28 % (B) 10 % (C) 75 % (D) 25 %
47. Gases ..... and ..... are transported by blood.  
 (A) O and CaO<sub>2</sub> (B) O<sub>2</sub> and CaO (C) O<sub>2</sub> and CO (D) O<sub>2</sub> and CO<sub>2</sub>
48. Blood provides immunity by the:  
 (A) Rh factor (B) lymphocytes (C) Both A & B (D) None of these

49. Blood acts as a ..... to maintain the acid - base balance.  
 (A) Buffer       (B) Solvent       (C) Solute       (D) None of these
50. The heart is enclosed in a double membranous sac , the:  
 (A) Abdominal Cavity     (B) Thoracic Cavity     (C) Pericardial Cavity     (D) Pleural Cavity
51. Liver receives blood from digestive system through:  
 (A) Iliac vein       (B) Hepativ vein       (C) Portal vein       (D) Hepatic portal vein
52. Atrioventricular valve present in left side of heart is:  
 (A) Semilunar       (B) Pulmonary       (C) Tricuspid       (D) Bicuspid
53. The aorta bifurcates into:  
 (A) Veins       (B) Capillaries       (C) Iliac arteries       (D) None of these
54. The liver receives:  
 (A) Iliac vein       (B) Portal vein       (C) Hepatic portal       (D) None of these
55. One complete heart beat lasts for:  
 (A) 0.2 seconds       (B) 0.15 seconds       (C) 0.4 seconds       (D) 0.8 seconds
56. The relaxed period of heart chambers is called diastole:  
 (A) Flat worms       (B) Systole       (C) Diastole       (D) None of these
57. The tricuspid and bicuspid valves close , and ..... sound is made.  
 (A) Dubb       (B) Both A & D       (C) None of these       (D) Lubb
58. In one's life , heart contracts about ..... without stopping.  
 (A) 2.5 billion       (B) 3.5 billion       (C) 2.5 billion times       (D) 3.5 billion times
59. The heart beat cycle described above starts when the sino-atrial node:  
 (A) A - V node       (B) Diastole       (C) Pace maker       (D) None of these
60. There is a delay of approximately ..... in conductor from the S - A node to A - V node, permitting atrial systole to be a completed before ventricular systole begins.  
 (A) 0.1 sec       (B) 0.5 sec       (C) 15 sec       (D) 0.15 sec
61. Electrodes are placed on the ..... on opposite sides of the heart:  
 (A) Lungs       (B) Heart       (C) Skin       (D) None of these
62. Electro cardiogram which is taken by ..... machine.  
 (A) Ultrasound       (B) X - ray       (C) Both A & B       (D) Electrocardiograph
63. Pacemaker is responsible for ..... the impulses which trigger the heart beat rate.  
 (A) Delying       (B) Initiating       (C) Terminating       (D) None of these
64. This pacemaker provides continued rhythmic impulses that take over the control of the:  
 (A) Ventrides       (B) Veins       (C) Artries       (D) Capillaries
65. Failure of interatrial foramen ( an opening in the inter - artrial septum ) to close or of ductus arteriosus to fully constrict results in:  
 (A) Oederna       (B) Cyanossi       (C) Thalasernia       (D) None of these

66. The babies with Cyanosis is called:  
 (A) Blue babies     (B) Abnormal babies     (C) Black babies     (D) None of these
67. The renal vein brings the impure blood form:  
 (A) Lungs     (B) Kidney     (C) Liver     (D) Brain
68. Veins are the blood vessels which transport blood from body cells towards:  
 (A) Heart     (B) Liver     (C) Kidney     (D) Brain
69. The valves present in the veins are called:  
 (A) Aortic     (B) Bicuspid     (C) Semi - lunar     (D) Tricuspid
70. How much of the cytoplasm of red blood cells have haemoglobin:  
 (A) 95%     (B) 97%     (C) 93%     (D) 91%
71. Hepatic portal vein carries blood from:  
 (A) Lungs     (B) Alimentary canal     (C) Kidneys     (D) Liver
72. Arteriosclerosis causes narrowing and hardening of:  
 (A) Arteries     (B) Capillaries     (C) Veins     (D) None of these
73. The capillaries are the sites where the material are exchanged between the blood and:  
 (A) Kidney     (B) Body tissues     (C) Liver     (D) None of these
74. Capillaries join to form ..... which join to form veins.  
 (A) Venules     (B) Valves     (C) Arteries     (D) None of these
75. A condition of high blood pressure is known as:  
 (A) Arteriosclerosis     (B) Hypertension     (C) Hypotension     (D) Haemorrhage
76. .... is a solid mass or plug of blood constituents ( clot ) in a blood vessel.  
 (A) Thrombus     (B) Haemorrhage     (C) Stroke     (D) None of these
77. .... is the formation of thrombus.  
 (A) Hypertension     (B) Thrombosis     (C) Both A & B     (D) None of these
78. Blockage of blood vessel in the heart is called:  
 (A) Both A & B     (B) Heart attack     (C) Myocardialinfraction     (D) None of these
79. Control blood pressure by regular ..... and .....
- (A) Walk and eat     (B) Walk and exercise     (C) Eat , sleep     (D) None of these
80. Discharge of blood from blood vessel is called as:  
 (A) Haemorrhage     (B) Thrombosis     (C) Heart attack     (D) Stroke
81. The symptoms of the stroke vary depending on the part of the .... that has been damaged.  
 (A) Heart     (B) Liver     (C) Brains     (D) None of these
82. To avoid brain haemorrhage the ..... must be controlled.  
 (A) Heart rate     (B) Health     (C) None of these     (D) Blood pressure
83. In haemorrhage the ..... loses its elasticity.  
 (A) Capillary     (B) Arteries     (C) Veins     (D) None of these

84. The light falling on leaf surface is absorbed about:

- (A) 1 %                      (B) 25 %                      (C) 50 %                      (D) 100 %

85. Lenticels are aerating pores formed in the lungs of:

- (A) Pericycle                      (B) Bark                      (C) Endodermis                      (D) Epidermis

### Fill in the blanks

pakcity.org

Q1: In the process of facilitated diffusion, the carrier molecules are .....

Q2: ..... in 1874 suggested that water molecules move along the cells walls of xylem vessels due to imbibition.

Q3: The most abundant compound of blood plasma of man is .....

Q4: The substance produced by basophils which inhibits blood-clotting is .....

Q5: The insects which feed on the phloem of plants are the .....

Q6: Pure water has a water potential which is equal to .....

### Answers

- |                    |                  |                 |
|--------------------|------------------|-----------------|
| 1. <b>Proteins</b> | 2. <b>Sacks</b>  | 3. <b>Water</b> |
| 4. <b>Heparin</b>  | 5. <b>Aphids</b> | 6. <b>Zero</b>  |

### Chapter : 14

### Transport

### Subjective

Q1: **What do you know about active transport?**

Ans: Transfer of substances from region where its concentration is low to where it is high especially through a membrane accomplished by means of expenditure of energy from metabolism. Probably all cells can do this.

Q2: **How much of the total surface area of the root is provided by the root hairs?**

Ans: Root hairs provide 67% of the total area of the root.

Q3: **Which two factors determine the water potential in plant cells?**

Ans: These factors are solute potential and the pressure potential.

Q4: **What is pericardial sinus in cockroach?**

Ans: It is the cavity in which lies 13-chambered heart of cockroach.

Q5: **Write down the kinds of agranulocytes.**

Ans: These are monocytes and lymphocytes.

Q6: **Where are the old and worn out red blood cells destroyed?**

Ans: The old and worn out red blood cells are destroyed in the spleen and liver.

Q7: **What is the condition of high blood pressure in man known as?**

Ans: It is known as hypertension.

Q8: **What is thrombus?**

Ans: A solid mass or plug of blood clot in a blood vessel is called thrombus.

Q9: **Why is thalassemia also called Cooley's anaemia?**

Ans: It is named after an American Pediatrician, Thomas B Cooley who investigated on it.

Q10: **How much water is found in human blood plasma?**

Ans: The human blood contains about 90% of water.

Q11: **Which veins bring blood from the legs?**

Ans: The iliac veins bring blood from the legs.

Q12: **What is haemorrhage?**

Ans: The discharges of the blood from the blood vessels is called haemorrhage.

Q13: **What is an antiserum?**

Ans: The antiserum is serum, containing antibodies.

Q14: **What are blood vessels?**

Ans: The vessels in which blood flows are called blood vessels. There are three types of blood vessels.

- Arteries.
- Veins.
- Capillaries.

Q15: **Define osmotic or solute potential.**

Ans: It is the component of water potential that takes into account the concentration of solutes in the cell. It is represented by  $\Psi_s$  and is always negative.

Q16: **Name the three main blood vessels of Earth-worm.**

Ans: These are the dorsal vessel, the ventral vessel and the sub natural vessel.

Q17: **What is the average life of red blood cell of man?**

Ans: The average life of a red blood cell of a man is about 120 days (4 months).

Q18: **Write a short note on heart attack.**

Ans: Blockage of blood vessel in the heart by an embolus causes necrosis or damage to portion of heart muscles, a condition known as heart attack or technically myocardial infarction. Heart attack is due to disruption of control system of the heart with accompanying arrhythmia, especially ventricular fibrillation.

Q19: **Name the chambers of the human heart.**

Ans: These are right and left atria and the right and left ventricles.

Q20: **Which is the chief blood distributing vessel in man?**

Ans: Aorta is the chief blood distributing vessel in man.

Q21: **Define immunity.**

Ans: The ability of the living organisms to withstand harmful, foreign infective agents and toxins is called immunity.

Q22: **What are lacteals?**

Ans: The branches of lymph capillaries within the villi of the intestine are called lacteals.

Q23: **Define arteriosclerosis.**

Ans: It is a degenerative arterial change associated with advancing age.

Q24: **What is the significance of valves in the heart of man?**

Ans: The valves allow the blood to flow only in one direction.

Q25: **How much time does a heartbeat of man take?**

Ans: It takes about 0.8 second.

Q26: **Who proposed "pressure flow theory" and when?**

Ans: Ernest Munch proposed "'pressure flow theory' in 1930.

Q27: **Which parts of the root serve to absorb water and salts from the soil?**

Ans: These parts are the root hairs.

Q28: **Name the components of the cell wall which can imbibe water.**

Ans: These are the cellulose pectin and lignin etc.

Q29: **Define transpiration.**

Ans: The loss of water from the surface of the plant in the form of water vapors is known as transpiration.

Q30: **How does the rise of temperature affect the rate of transpiration in plants?**

Ans: The rate of transpiration doubles for every temperature rise of about 10°C with in certain limits.

## Chapter : 14

## Transport



### Imp.Long Questions

Q1: Soil water moves and reaches to xylem tissue by various pathways, explain.

Q2: Explain phenomena of root pressure.

Q3: What cohesion tension theory. (v.imp)

Q4: Explain the different hypothesis to explain the opening and closing of stomata. (v.imp)

Q5: Transpiration is a necessary evil. Comment on this statement. (v.imp)

Q6: Explain the factors affecting rate of transpiration. (v.imp)

Q7: What is transpiration? Describe its various types. (v.imp)

Q8: Explain pressure flow theory.

Q9: How transportation takes place in hydra?

Q10: Write a detail note on blood of human being.

Q11: Write down functions of blood. Enlist any eight. (v.imp)

Q12: What is plasma? Describe its various components.

Q13: Give an account of composition of blood plasma.

Q14: Write a comprehensive note on functions of blood.

Q15: Explain leukemia and thalassemia.

Q16: Discuss structure and function of human heart.

Q17: Write a note on cardiac cycle. Write its three phases. (v.imp)

Q18: How arteries are different from veins?

Q19: What factors are involved in gaseous exchange between capillaries and alveoli?

Q20: Write down any four differences between arteries and veins. (v.imp)

Q21: Describe blood pressure and rate of blood flow.



- Q22: What is myocardial infraction or heart attack? Explain.
- Q23: Describe lymphatic system. Also write down its various functions.
- Q24: Write down the main functions of lymphatic system in human body. (v.imp)
- Q25: Write a note on major types of immunity. (v.imp)

www.pakcity.org

