BIOLOGY

Worksheet-15

STEP

A PROJECT BY PUNJAB GROUP

Worksheet-15 (i)
(Transport in Human)

Q.1 Lymphatic system is responsible for the transport and returning of material:

A) From the tissues of the body to blood

B) From the tissues of the body to lymph

C) From the tissue of the body to external environment

D) From the respiratory system to blood

Q.2 A fluid that flows in the lymphatic system is called:

A) Circulatory fluid

B) Tissue fluid

C) Lymph

D) Lymph or tissue fluid

Q.3 The system that comprises lymph capillaries, lymph vessels, lymphoid masses, lymph nodes and lymph is called:

A) Transport system

B) Blood vascular system

C) Lymphatic system

D) Immune system

Q.4 Lymph capillaries end blindly in the body tissues, where pressure from the accumulation of _____ forces the fluid into the lymph capillaries:

A) Interstitial fluid

B) Extracellular

C) Intracellular fluid

D) Interstitial or extracellular fluid

Q.5 Lymph is a fluid in transit between interstitial fluids and:

A) Lymph C) Tissue fluid

B) Blood D) Body fluid

Q.6 The intercellular spaces in the walls of lymph vessels are larger than those of:

A) Capillaries of blood vascular system

B) Veins of blood vascular system

C) Arteries of blood vascular system

D) Vanae Cavae

Q.7 Lymph capillaries join to form:

A) Lacteals

B) Larger and larger lymph vessels

C) Smaller lymph vessels

D) Venae cave

Q.8 Lacteals are the branches of lymph capillaries located within:

A) Ileum C) Villi

B) Microvilli D) Small intestine

Q.9 Along the pathway, the lymph vessels have at certain points, masses of connective tissue, where lymphocytes are present; these are:

A) Lymphoid masses C) Thymus

B) Lymph nodes D) Adenoid

Q.10 Lymph nodes get supply by:

A) Many efferent lymph vessels

B) Single efferent lymph vessels

C) Many afferent lymph vessels

D) Single afferent lymph vessels

Q.11 Several _____ are present in the walls of digestive tract in the mucosa and sub mucosa.

A) Lymph nodes

B) Lacteals

C) Lymphoid masses

D) Lymph vessels

Q.12 The net difference between the fluid taken back by blood capillaries from interstitial spaces and the fluid given out by blood capillaries into the interstitial spaces in an average person per day is:

A) 1000 ml C) 3000 ml

B) 2000 ml D) 4000 ml

Q.13 The lacteals of villi absorb:

A) Small fat globules

B) Large polypeptides

C) Large fat globules

D) Small polypeptides

Q.14 _____ have lymphocytes and macrophages that destroy bacteria and viruses.

A) Lymphoid masses

B) Lymph nodes

C) Lymphatic vessels

D) Lymphatic ducts

Q.15 The painful swelling of lymph nodes in certain diseases is largely a result of the accumulation of:

A) Dead lymphocytes and microphages

B) Dead lymphocytes and macrophages

C) Living lymphocytes and microphages

D) Living lymphocytes and macrophages

Q.16 Just as the _____ filter the lymph, the _____ filters blood.

A) Spleen, Lymph nodes

B) Lymph nodes, Lymph nodes

C) Spleen, Spleen

D) Lymph nodes, Spleen

Q.17 The heart is enclosed in a double membranous sac called:

A) Thoracic cavity C) Pericardial cavity

B) Chest cavity D) Pleural cavity

Q.18 Pericardium prevents the heart from:

A) Over extension C) Physical trauma

B) Abrasion D) Contraction

Q.19 _____ of the heart is made up of special type of muscles, the cardiac muscles.

A) Pericardium C) Myocardium

B) Epicardium D) Endocardium

Q.20 The cardiac muscles contain:

A) Myofibrils

B) Myofilaments of actin

C) Myofilaments of myosin

D) Myofibrils and Myofilaments of actin and myosin

Q.21 The heart contracts:

A) Voluntarily C) Irregularly

B) Passively D) Rhythmically

Q.22 The left atrioventricular valve is:

A) Tricuspid valve C) Semilunar valve

B) Bicuspid valve D) Sphincter valve

Q.23 There are four chambers of the heart:

A) Two upper thick-walled atria

B) Two lower thin walled ventricles

C) Two upper thin walled atria and two lower thick-walled ventricles

D) Two upper thin walled ventricles and two lower thick-walled atria

Q.24 In human heart complete separation of deoxygenated blood occurs on/in:

A) Right side C) Lower chambers

B) Left side D) Upper chambers

Q.25 In human heart complete separation of oxygenated blood occur on/in:

A) Right side C) Lower chambers

B) Left side D) Upper chambers

Q.26 With respect to their relation with rest of the body, the lower chambers of human heart act as:

A) Expulsion pump C) Dual pump

B) Suction pump D) Reservoir

Q.27 _____ receives deoxygenated blood via venae cavae.

A) Right atrium C) Right ventricle

B) Left atrium D) Left ventricle

Q.28 Blood is passed on to right ventricle through:

A) Tricuspid valve C) Semilunar valve

B) Bicuspid valve D) Mitral valve

Q.29 The flaps of tricuspid valve are attached to papillary muscles of the wall of right ventricle by means of:

A) Fibrous cords

B) Fibrous cords called chordae tendineae

C) Fibrous cords called ligaments

D) Epithelial extensions

Q.30 Chordae tendineae are attached to the:

A) Papillary muscles

B) Papillary muscles and wall of tricuspid valve

C) Flaps of tricuspid valve

D) Walls of the right ventricle

Q.31 When right ventricle contracts, the blood is passed to the:

A) Right atrium C) Left ventricle

B) Pulmonary trunk D) Left atrium

Q.32 Pulmonary trunk is sub divided into:

A) Left and right pulmonary veins

B) Left and right pulmonary trunks

C) Left and right pulmonary arteries

D) Superior and inferior venae cavae

Q.33 After oxygenation in lungs, the blood is brought by pulmonary veins to the:

A) Left atrium C) Left ventricle

B) Right atrium D) Right ventricle

Q.34 Left atrium passes the blood via _____ to the left ventricle.

A) Tricuspid valve C) Semilunar valve

B) Bicuspid valve D) Sphincter valve

Q.35 When left ventricle contracts, it pushes the blood through _____ to all parts of the body.

A) Aorta C) Pulmonary artery

B) Pulmonary trunk D) Pulmonary vein

Q.36 At the base of aorta _____ valves are also present.

A) Bicuspid C) Sphincter

B) Tricuspid D) Semilunar

Q.37 Coronary arteries supply the blood to the:

A) Liver C) Heart

B) Spleen D) Gut

Q.38 The aorta forms an arch, and before descending down gives of:

A) Two branches C) Four branches

B) Three branches D) Five branches

Q.39 Aorta gives many small branches to the chest wall and then passes down to the abdominal region; Here it gives branches, which supply blood to:

A) Different parts of alimentary canal

B) Kidneys

C) Lower abdomen

D) Different parts of alimentary canal, kidneys and Lower abdomen

Q.40 The blood from the upper part of the body is collected by different veins, which join to form:

A) Aorta

B) Pulmonary trunk

C) Superior vena cava

D) Inferior vena cava

Q.41 Femoral veins pour deoxygenated blood into:

A) Renal veins C) Iliac veins

B) Femoral veins D) Hepatic veins

Q.42 Renal veins pour blood into:

A) Superior vena cava

B) Inferior vena cava

C) Hepatic portal vein

D) Jugular vein

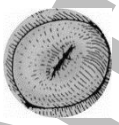
Q.43 The vein which is formed by many veins collecting deoxygenated blood with absorbed food from different parts of alimentary canal, is called:

A) Hepatic portal vein C) Hepatic vein

B) Iliac vein D) Renal vein

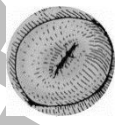
Q.44 Identify the tricuspid valve:

A)  C) 

B)  D) 

Q.45 Identify the bicuspid valve:

A)  C) 

B)  D) 

Q.46 The walls of atria and walls of ventricles are relaxed during:

A) Systole

B) Diastole

C) Atrial systole

D) Ventricular systole

Q.47 As the atria are filled with blood, they become distended and have:

A) More pressure than ventricles

B) Same pressure as ventricles

C) Less pressure than ventricles

D) Less volume than ventricles

Q.48 'Lubb' sound is produced by closure of:

A) Outlet valves

B) Atrioventricular valves

C) Semilunar valves

D) Inter ventricular valves

Q.49 'Dubb' sound is produced by the closure of:

A) Bicuspid valves

B) Tricuspid valves

C) Bicuspid and tricuspid valves

D) Semilunar valves

Q.50 In one's life, heart contracts _____, without stopping.

A) 2-5 billion times C) 2-5 million times

B) 1-5 billion times D) 1.5 million times

Q.51 The oxygenated blood enters the left atrium through:

A) Pulmonary artery

B) Pulmonary veins

C) Interior vena cava

D) Superior vena cava

Q.52 One complete heart beat consists of:

A) One systole

B) One diastole

C) One systole and one diastole

D) One systole and two diastoles

Q.53 What occurs, just prior to ventricular contraction:

A) P wave C) QRS wave

B) T wave D) S wave

Q.54 Highest blood pressure is generated by:

A) Atrial diastole

B) Atrial systole

C) Ventricular diastole

D) Ventricular systole

Q.55 Highest blood pressure is observed in:

A) Capillaries C) Venae cavae

B) Veins D) Arteries

Q.56 There is no pulse in:

A) Veins

B) Arteries

C) Capillaries

D) Veins and capillaries

Q.57 There are no valves in:

A) Arteries

B) Capillaries

C) Arteries and capillaries

D) Veins

Q.58 The role of globulins in maintenance of osmotic pressure of blood is:

A) 75% C) 35%

B) 65% D) 25%

Q.59 The average life span of a RBC is:

A) 120 days C) 60 days

B) 30 days D) 90 days

Q.60 On one hand its high level in our blood produces cardiovascular disorder on the other hand it serves as a precursor for steroid hormones. It is:

A) Acylglycerol C) Animal fat

B) Cholesterol D) Edible oil

Q.61 Which one of the following gives rise to macrophages?

A) Neutrophils C) Monocytes

B) Eosinophils D) Lymphocytes

Q.62 They are without nucleus since their origin:

A) RBCs C) Platelets

B) WBCs D) Erythrocytes

Q.63 A solid mass or plug of blood constituents in the blood vessels is called:

A) Thrombus C) Embolus

B) Thrombosis D) Atheroma

Q.64 In thromboembolism:

A) Thrombosis is followed by embolism

B) Thrombosis follows the embolism

C) Thrombosis and embolism occur simultaneously

D) Thrombosis occurs independent of embolism

Q.65 Damage to portion of cardiac muscle is called:

A) Cerebral infraction

B) Arythonia

C) Myocardial infarction

D) Heart attack

Q.66 Cerebral infarction is also called as:

A) Paralysis C) Heart attack

B) Stroke D) Hemorrhage

ANSWER KEY (Worksheet-15 (i))					
1	A	23	C	45	B
2	D	24	A	46	B
3	C	25	B	47	A
4	D	26	A	48	B
5	B	27	A	49	D
6	A	28	A	50	A
7	B	29	B	51	B
8	C	30	B	52	C
9	A	31	B	53	C
10	C	32	C	54	D
11	C	33	A	55	D
12	C	34	B	56	D
13	C	35	A	57	C
14	B	36	D	58	D
15	B	37	C	59	A
16	D	38	B	60	B
17	C	39	D	61	C
18	A	40	C	62	C
19	C	41	C	63	A
20	D	42	B	64	A
21	D	43	A	65	C
22	B	44	A	66	B

EXPLANATION

Q.1 Answer is "From the tissues of the body to blood"

Explanation: Lymph or tissue fluid is actually a fluid of interstitial spaces i.e. it oozes out from the blood in interstitial spaces then collected and drained through lymph vessels and finally it is returned to blood via subclavian vein. Thus lymph is a fluid in transit between interstitial fluid and the blood.

Q.2 Answer is "Lymph or tissue fluid"

Explanation: Lymph capillaries end blindly in the body tissue, where pressure from the accumulation of interstitial fluid forces the fluid to enter the lymph capillaries. This fluid is called lymph. The lymph vessels empty in veins, so lymph is fluid in transit between interstitial fluid and blood.

Q.3 Answer is "Lymphatic system"

Explanation: The system that is responsible for the transport and returning of materials from the tissues of the body to the blood is called lymphatic system. It comprises lymph capillaries, lymph vessels, lymphoid masses, lymph nodes and lymph the fluid which flows in the system.

Q.4 Answer is "Interstitial or extracellular fluid"

Explanation: Lymph capillaries or lymphatic capillaries are tiny, thin walled vessels located in the spaces between cells (except in the central nervous system and non-vascular tissues) which serve to drain and process extracellular fluid. Upon entering the lumen of a lymphatic capillary, the collected fluid along with associated cells (notably white blood cells) is known as lymph.

Lymphatic capillaries are slightly larger in diameter then blood capillaries and have closed ends. Their unique structure permits, interstitial fluid to flow into them but not out.

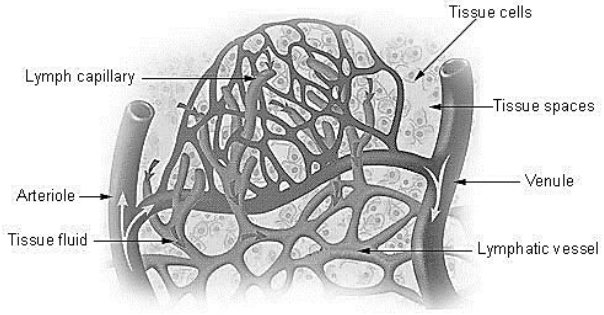
Q.5 Answer is "Blood"

Explanation: Lymph is the fluid that circulates throughout the lymphatic system. The lymph is formed when the interstitial is collected through lymph capillaries. It is then transported through larger lymphatic vessels to lymph nodes, where it is cleaned by lymphocytes, before emptying ultimately into the right or the left sub-clavian vein, where it mixes back with the blood.

Q.6 Answer is "Capillaries of blood vascular system"

Explanation: Lymph capillaries are slightly larger in diameter than blood capillaries and have closed ends. Their

unique structure permits interstitials fluid to flow into them but not out. The ends of the endothelial cells that make up the wall of a lymphatic capillary overlap. When pressure is greater in the interstitial fluid than in lymph, the cells separate slightly, like the opening of a one –way swinging door and interstitial fluid enters the lymphatic capillaries. When pressure is greater inside the lymphatic capillary, the cells adhere more closely and lymph cannot escape back into interstitial fluid.

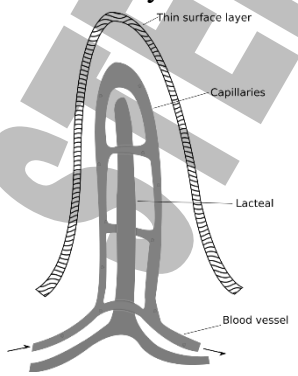


Q.7 Answer is "Larger and larger lymph vessels"

Explanation: Lymph capillaries join to form larger and larger lymph vessels and ultimately form thoracic lymphatic duct which opens into sub-clavian vein. The flow of lymph is always towards the thoracic duct.

Q.8 Answer is "Villi"

Explanation: They are called lacteal because fluid inside them contains fats and appears milky (lactase-milk). In the intestine, the branches of lymph capillaries, within villi are called lacteals that absorb dietary fats.



Q.9 Answer is "Lymphoid masses"

Explanation: Several lymphoid masses are present in the walls of digestive tract, in the mucosa and sub-mucosa. The larger masses spleen and thymus, tonsils and adenoids are all lymphoid masses. These produce lymphocytes.

Q.10 Answer is "Many afferent lymph vessels"

Explanation: Several afferent lymph vessels bring lymph into lymph nodes whereas single efferent lymph vessel drains the lymph node.

Q.11 Answer is "Lymphoid masses"

Explanation: Several lymphoid masses are present in the walls of digestive tract, in the mucosa and sub-mucosa. The larger masses like spleen and thymus, tonsils and adenoids are all lymphoid masses. These produce lymphocytes.

Q.12 Answer is "3000ml"

Explanation: In an average person, about three liters more fluid leaves the blood capillaries than is reabsorbed by them each day. Lymphatic system returns this excess fluid and its dissolved proteins and other substances to the blood.

Q.13 Answer is "Large fat globules"

Explanation: The lacteals of villi absorb large fat globules, which are released by interstitial cells after the products of digestion of fats are absorbed. After a fatty meal these fat globules may make up 1% of the lymph.

Q.14 Answer is "Lymph nodes"

Explanation: The lymphatic system helps defend the body against foreign invaders. Lymph nodes have lymphocytes and macrophages that destroy bacteria and viruses. The painful swelling of lymph nodes in certain diseases (mumps is an extreme example) is largely a results of accumulation of dead lymphocytes and macrophages.

Q.15 Answer is "Dead lymphocytes and macrophages"

Explanation: The lymphatic system helps defend the body against foreign invaders. Lymph nodes have lymphocytes and macrophages that destroy bacteria and viruses. The painful swelling of lymph nodes in certain diseases (mumps in an extreme example) is largely a results of accumulation of dead lymphocytes and macrophages.

Q.16 Answer is "Lymph nodes, spleen"

Explanation: Just as the lymph nodes filter lymph, the spleen filters blood, exposing it to macrophages and lymphocytes that destroy foreign particles and aged red blood cells.

Q.17 Answer is "Pericardial cavity"

Explanation: The heart of human is located in the chest cavity. The heart is enclosed in a double membranous sac the pericardial cavity, which contains pericardial fluid. Pericardium prevents the heart, prevents it from overextension and pericardial fluid protects it from abrasion.

Q.18 Answer is "Overextension"

Explanation: Pericardium prevents the heart from overextension; Pericardial fluid prevents the heart from abrasion and ribcage prevents it from external physical trauma.

Q.19 Answer is "Mycocardium"

Explanation: Myocardium of the heart is made up of special type of muscles called cardiac muscles. These muscles contains myofibrils and myofilaments of myosin and actin. Their arrangement is similar to those in skeletal muscles fibres and their mechanism of contraction is essentially the same, except they are branched cells in which the successive cells are separated by junctions called intercalated discs.

Q.20 Answer is "Myofibril and myofilaments of actin and myosin"

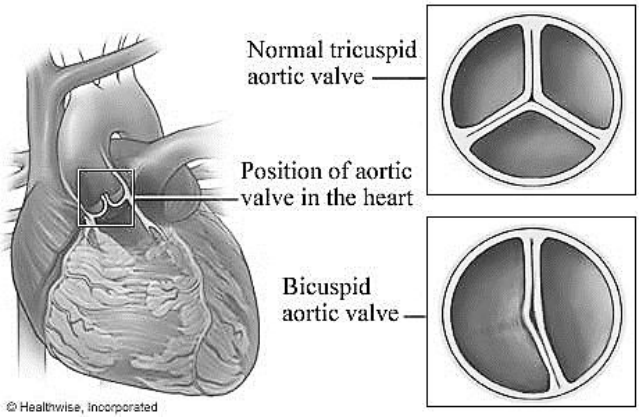
Explanation: The arrangement of cardiac muscle cells or fibres is similar to those in skeletal muscles fibre. These muscles also contains myofibrils and myofilaments of actin and myosin. The difference is that of branches and intercalated discs which are found in cardiac muscles fibres only.

Q.21 Answer is "Rhythmically"

Explanation: Cardiac contraction is set at a rhythmic cycle.

Q.22 Answer is "Bicuspid valve"

Explanation: It is also called miral valve. It contains two flaps.



Q.23 Answer is "Two upper thin walled atria and two lower thick-walled ventricles"

Explanation: Two upper chambers containing thin walls are called atria whereas two lower chambers containing thick wall are called ventricles.

Q.24 Answer is "Right side"

Explanation: The right chambers of heart right i.e. atrium and right ventricle contain deoxygenated blood.

Q.25 Answer is "Left side"

Explanation: The left chambers of heart (left atrium and left ventricle) contain oxygenated blood.

Q.26 Answer is "expulsion pumps"

Explanation: As right ventricle pushes out the blood to pulmonary artery for pulmonary circulation whereas left ventricle pushes it to aorta for systemic circulation.

Q.27 Answer is "Right atrium"

Explanation: Both superior and inferior venae cavae open into right atrium7.

Q.28 Answer is "Tricuspid valve"

Explanation: It is right atrioventricular valve or right inlet valve having three flaps.

Q.29 Answer is "Fibrous cords called chordae tendineae"

Explanation: These are called heart strings (tendons) which connect papillary muscles to the inlet valves of the heart. These are made up of 80% collagen and 20% elastin and epithelial cells.

Q.30 Answer is "Papillary muscles and walls of tricuspid valve"

Explanation: The flaps of bicuspid and tricuspid valves are similarly attached through chordae tendinae to papillary muscles of the walls of ventricles.

Q.31 Answer is "Pulmonary trunk"

Explanation: Right ventricle carrying deoxygenated blood, pushes it upon contraction to the lungs through pulmonary artery or pulmonary trunks.

Q.32 Answer is "Left and right pulmonary arteries"

Explanation: These bring the deoxygenated blood to right and left lungs respectively.

Q.33 Answer is "Left atrium"

Explanation: Left atrium receives oxygenated blood from lungs via pulmonary veins.

Q.34 Answer is "Bicuspid valve"

Explanation: The left atrioventricular valve, also called left inlet valve or mitral valve controls the unidirectional flow of oxygenated blood from left atrium to left ventricle.

Q.35 Answer is "Aorta"

Explanation: Aorta or Aortic arch receives oxygenated blood from left ventricle and distributes it to the entire body through systemic circulation.

Q.36 Answer is "Semilunar"

Explanation: Outlet valves are called semilunar valves which exist at the base of all vessels leaving the heart or entering into heart.

Q.37 Answer is "Heart"

Explanation: Coronary arteries are the first arteries which emerge from the aorta before turning towards left side and they provide blood supply to the heart itself.

Q.38 Answer is "Three branches"

Explanation: An innominate artery, a left common carotid artery and left subclavian artery.

Q.39 Answer is "different parts of alimentary canal, kidney and lower abdomen"

Explanation: After arching towards left behind the heart aorta covers the chest area through bronchial arteries and then enters into the abdominal areas to cover the alimentary canal, kidneys and lower abdomen through renal arteries and mesenteric arteries.

Q.40 Answer is "Superior vena cava"

Explanation: It drains upper half of the body.

Q.41 Answer is "Iliac veins"

Explanation: Right and left iliac veins which fuse to give rise to inferior vena cava receive blood from right and left femoral veins and pour the blood into the inferior vena cava.

Q.42 Answer is "Inferior vena cava"

Explanation: Renal veins drain kidneys and pour the deoxygenated blood into inferior vena cava.

Q.43 Answer is "Hepatic portal vein"

Explanation: It fuses with hepatic vein and then opens into inferior vena cava.

Q.44 Answer is "A"

Explanation: Having three flaps, 'A' is a tricuspid valve.

Q.45 Answer is "B"

Explanation: Having two flaps.

Q.46 Answer is "Diastole"

Explanation: Diastole is a phase of relaxation of heart chambers.

Q.47 Answer is "More pressure than ventricles"

Explanation: Because they are filled with blood but ventricles are empty.

Q.48 Answer is "Atrioventricular valves"

Explanation: "Lubb" sound is produced when inlet valves or atrioventricular valves close and their flaps strike with each other.

Q.49 Answer is "Semilunar valves"

Explanation: Semilunar valves which are also called outlet valves produce dub sound on closure.

Q.50 Answer is "2-5 billion times"

Explanation: As per statistical evaluation given in text book.

Q.51 Answer is "Pulmonary veins"

Explanation: All veins carry deoxygenated blood except pulmonary veins, which carry blood from lungs to the left atrium.

Q.52 Answer is "One systole and one diastole"

Explanation: Two upper chamber (atria) contract in a single step and both lower chambers (ventricles) relax at that time, then both lower chambers contract simultaneously and upper chamber relax at that time.

Q.53 Answer is "QRS wave"

Explanation: A normal electrocardiogram (ECG) indicates that the heart is functioning properly. The P wave occurs just prior to atrial contraction; the QRS wave occurs just prior to ventricular contraction and the T wave occurs when the ventricles are recovering from contraction.

Q.54 Answer is "Ventricular systole"

Explanation: When ventricles contract, blood is pushed through aorta to arterial system and highest blood pressure is generated as the walls of ventricles are thicker than those of atria.

Q.55 Answer is "Arteries"

Explanation: As blood is directly pumped into aorta.

Q.56 Answer is "Veins and capillaries"

Explanation: Blood is not directly being pumped into veins and capillaries so they don't exhibit pulse pressure.

Q.57 Answer is "Arteries and capillaries"

Explanation: The pumping pressure of heart does not allows blood to move backward in these two types of vessels.

Q.58 Answer is "25%"

Explanation: As per available statistical data from text book.

Q.59 Answer is "120 days"

Explanation: It is four month i.e. 120 days.

Q.60 Answer is "Cholesterol"

Explanation: Excess of cholesterol cause some cardiovascular problems however a fixed amount of cholesterol is inevitable for animals including human being due to its role is stabilization of the structure and fluidly of cell membranes and its role in hormone synthesis.

Q.61 Answer is "Monocytes"

Explanation: Monocytes carry out macrophagocytosis (destruction of larger foreign particles) however Neutrophils carry out microphagocytosis (destruction of smaller foreign particles).

Q.62 Answer is "Platelets"

Explanation: Platelets are fragments of megakaryocytes i.e., not complete cells.

Q.63 Answer is "Thrombus"

Explanation: This plug is thrombus but its formation is thrombosis.

Q.64 Answer is "Thrombosis is followed by embolism"

Explanation: First thrombosis occurs and then thrombus is dislodged and is trapped at new site. Now it is called embolus and process is called embolism. So as one follows the other so collectively called thromboembolism.

Q.65 Answer is "Myocardial infarction"

Explanation: Myocardial infarction will lead to heart attack as the supply of blood to heart muscles in reduced or stops.

Q.66 Answer is "Stroke"

Explanation: Cerebral infarction results in sudden death so that is why it is called stroke.

Worksheet-15(ii)

(Immunity)

Q.1 Immunity is a capacity to do following things، EXCEPT:

A) Recognition of intrusion

B) Effective and timely removal of intruders

C) Mobilization of cells and cell products

D) Blockage of entrance of intruders

Q.2 A biological defense of our body with greater speed and effectiveness is called:

A) Infestation C) Immunity

B) Disinfestation D) Antisepsis

Q.3 The capacity of our body to identify and eradicate intruders is called:

A) Disinfestation C) Antisepsis

B) Chemotherapy D) Immunity

Q.4 The first defence line of our body is:

A) Skin

B) Phagocytes

C) Mucous membrane

D) Skin and Mucous membranes both

Q.5 Pick up the one which is part of general defense system of our body:

A) Antibodies

B) Humoral immune response

C) Phagocytes

D) Cell mediated response

Q.6 Lymphocyte B and T have been named due to their:

A) Relationship with bursa of Fabricius and thymus gland respectively

B) Origin from bursa Fabricius and thymus, respectively

C) Storage in bursa of Fabricius and thymus

D) Destruction in bursa of Fabricius

Q.7 Thymus gland provides immunological competence to:

A) B lymphocytes

B) Antibodies

C) T-lymphocytes

D) Immunoglobulins

Q.8 An antibody molecule consists of:

A) Two identical light chains

B) Two identical heavy chains

C) Two identical light and two identical heavy chains

D) Two identical light chains and two non-identical heavy chains

Q.9 In light chain of antibodies:

A) Variable sequence of amino acid is longer one

B) Variable sequence of amino acid is shorter one

C) Both variable and constant amino acids sequences have equal length

D) Only variable sequence of amino acids occurs

Q.10 Globular blood proteins that are produced by B – lymphocytes and that bind specifically to foreign antigenic materials in the body and destroy them are called:

A) Antigens C) Antibodies

B) Immunogens D) Antibiotics

Q.11 The antigen – antibody complexes formed in the body are taken up by:

A) Phagocytes C) Monocytes

B) Lymphocytes D) Leukocytes

Q.12 In the case of snake bite venom passive immunity is produced by:

A) Antitoxins

B) Antivenome serum

C) Material from some similar disease

D) Attenuated germs

Q.13 The AIDS victim often succumbs to a:

A) Bacterial disease
B) Cancer
C) Viral disease
D) Bacterial disease or cancer

Q.14 There is no known cure of the:

A) Snake bite
B) Rabies
C) Infectious hepatitis
D) AIDS

Q.15 Antivenom serum is used to carry out:

A) Active immunization
B) Natural immunization
C) Passive immunization
D) Innate immunity

Q.16 Anti-rabies serum is a source of:

A) Active immunization
B) Natural immunization
C) Passive immunization
D) Innate immunity

Q.17 Anti-tetanus serum (ATS) is a source of:

A) Active immunization
B) Natural immunization
C) Passive immunization
D) Innate immunity

Q.18 Pick up the one which is not role of plasma cells:

A) Synthesis of antibodies
B) Liberation of antibodies in blood plasma
C) Attaching the antibodies to the surface of bacteria
D) Liberation antibodies in tissue fluid

Q.19 Pasteur next applied the principle of inoculation with attenuated cultures to the prevention of:

A) Small pox C) Cox pox
B) Anthrax D) Chicken Cholera

Q.20 Louis Pasteur used the word vaccine for:

A) Cow pox pus
B) Attenuated cultures of bacteria
C) Small pox pus
D) Attenuated cultures of viruses

Q.21 _____ include in second defense line.

A) Skin
B) Mucus
C) Neutrophilas
D) Saliva

Q.22 Physical components of the skin defense include(s):

A) Sweat gland
B) Dermis
C) Dermis and epithelium
D) Sweat gland, dermis and epithelium

Q.23 Following provide defense against infections in our digestion tract:

A) HCl in stomach
B) Mucus and cilia in nose/in nasal cavity
C) Mucus of bronchi
D) HCl in stomach, Mucus and cilia in nose/in nasal cavity and Mucus of bronchi.

Q.24 A typical antibody molecule is _____ shaped:

A) X C) J
B) Y D) H

Q.25 Antibodies are proteins and made up of how many polypeptide chains?

A) One C) Three
B) Two D) Four

Q.26 A typical antibody molecule is composed of how many identical heavy chains?

A) One C) Three
B) Two D) Four

Q.27 A typical antibody molecule is made up of how many identical light chains?
A) One C) Three
B) Two D) Four

Q.28 Which part of antibody recognizes the antigen during immune response?
A) Heavy part C) Light part
B) Variable part D) Constant part

Q.29 Variable amino acid sequences in antibody molecule are found in:
A) Both light chains only
B) One heavy and one light chain
C) Both heavy chains only
D) Both heavy and light chains

Q.30 In the structural diagram of an antibody molecule which portion is occupied by variable chains:
A) Lower region
B) Upper region
C) Middle region
D) In between chains

Q.31 On antibody molecule, two heavy chains and two light chains are bonded by:
A) Disulphide bonds
B) Hydrogen bonds
C) Phosphodiester bonds
D) Ionic bonds

Q.32 Substance that can be recognized by the receptor of B-cells:
A) Antigen C) Immunogen
B) Antibody D) Food

Q.33 All antibodies of an individual are manufactured in:
A) Alpha cells C) T-cells
B) B-cells D) Delta cells

Q.34 Any foreign substance, often a protein which stimulates the formation of antibodies is called:
A) Antigen C) Prion
B) Antibody D) Virion

Q.35 Any substance that elicits an immune response, by inducing production of antibodies:
A) Antigen C) Virion
B) Antibody D) Food

Q.36 The capacity to recognize the intrusion of any material foreign to the body and to mobilize cells products to help remove the particular sort of foreign material with greater speed and effectiveness is called:
A) Prion C) Antigen
B) Immunity D) Antibody

Q.37 The study of our protection from foreign macromolecules or invading organisms and our responses to them is called:
A) Bacteriology C) Ethology
B) Virology D) Immunology

Q.38 Globular blood proteins that are produced by B-lymphocytes and that bind specifically to foreign antigenic materials in the body and destroy them:
A) Viroid C) Antigen
B) Immunity D) Antibody

Q.39 Cells of the immune system which responds to foreign substance; some time secrete antibodies:
A) Lymphocytes C) Erythrocytes
B) Monocytes D) Macrophages

Q.40 The branch of biology which is the study of our protection from foreign macromolecules or invading organisms and our responses to them is called:
A) Virology C) Protection
B) Immunity D) Immunology

Q.41 Vaccine is available for all, EXCEPT:
A) Hepatitis B
B) Tuberculosis
C) Malaria
D) Polio

Q.42 The body's response to foreign particles such as the production of antibodies directed against a specific antigen is called:

A) Immune response
B) Immunity
C) Temperature response
D) Inflammatory response

Q.43 Which one of the following are called cytotoxic cells?

A) B-lymphocyte C) Monocytes
B) T-lymphocyte D) Neutrophiles

Q.44 Which one of the following type of T cells secrete cytotoxin which triggers destruction of the pathogen's DNA?

A) Helpher T cells
B) Suppressor T cells
C) Memory T cells
D) Cytotoxic T cells

Q.45 _____ are Y-shaped proteins that circulate through blood stream and bind to specific antigens thereby attacking microbes:

A) Haemoglobin C) Interferons
B) Antibodies D) Myoglobulines

Q.46 The antibodies are transported through _____ and the _____ to the pathogen invasion sites:

A) Blood lymph C) Water, injection
B) Water, flood D) Food, injection

Q.47 _____ is the kind of immunity which is obtained as a result of an infection:

A) Natural active immunity
B) Artificial active immunity
C) Natural passive immunity
D) Artificial passive immunity

Q.48 Passive immunity is developed by injecting

A) Vaccine C) Serum
B) Antiserum D) Antibodies

Q.49 Antibodies are specific i.e. cause the destruction of the antigen, are manufactured in:

A) Monocytes C) Basophils
B) B-lymphocytes D) Granulocytes

Q.50 Production of immunity when antibodies are injecting in form of antisera is called:

A) Active immunity C) Passive immunity
B) Inoculation D) Antibodies

ANSWER KEY (Worksheet-15(ii))					
1	D	23	A	45	B
2	C	24	B	46	A
3	D	25	D	47	A
4	D	26	B	48	D
5	C	27	B	49	B
6	A	28	B	50	C
7	C	29	D		
8	C	30	B		
9	C	31	A		
10	C	32	A		
11	A	33	B		
12	B	34	A		
13	D	35	A		
14	D	36	B		
15	C	37	D		
16	C	38	D		
17	C	39	A		
18	C	40	D		
19	B	41	C		
20	B	42	A		
21	C	43	B		
22	D	44	D		

EXPLANATION

Q.1 Answer is "Blockage of entrance of intruder"

Explanation: Blockage is not responsibility of immune system rather it is carried out by physical barriers.

Q.2 Answer is "Immunity"

Explanation: Infestation is a troublesome invasion of some parasite whereas disinfectation and antisepsis minimize the chances of infestation. However, immunity becomes active after infestation. Speed and effectiveness are characteristics of defense provided by immune system.

Q.3 Answer is "Immunity"

Explanation: In biology, immunity is the balanced state of multicellular organisms having adequate biological defenses to fight infection, diseases or other unwanted biological invasions, while having adequate tolerance to avoid allergy and autoimmune diseases.

Q.4 Answer is "Skin and mucous membranes both"

Explanation: Skin provides physical barrier against outer threats whereas mucous membranes provide barrier against inner threats.

Q.5 Answer is "Phagocytes"

Explanation: Phagocytes are part of general defence system of our body and make second line of defence in out body.

Q.6 Answer is "Relationship with bursa of Fabricius and thymus gland"

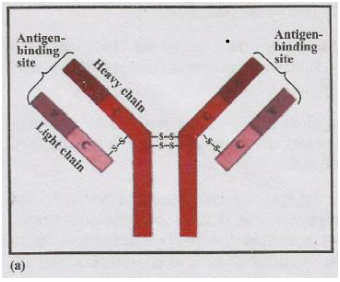
Explanation: T cells attain immunological competence by thymus gland whereas B cells were discovered from Bursa of Fabricus.

Q.7 Answer is "T-lymphocytes"

Explanation: The influence of the thymus gland is essential in making the T-cells immunologically competent.

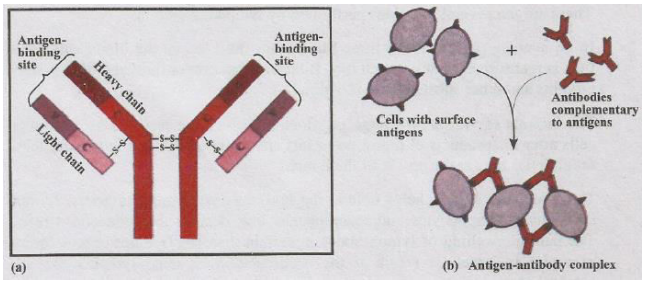
Q.8 Answer is "Two identical light and two identical heavy chains"

Explanation:



Q.9 Answer is "Both variable and constant amino acid sequences have equal length"

Explanation:



Q.10 Answer is "Antibodies"

Explanation: An antibody (Ab), also known as an immunoglobulin (Ig), is a large Y-shaped protein produced mainly by plasma cells that is used by the immune system to identify and neutralize pathogens such as bacteria and viruses. The antibody recognizes a unique molecule of the harmful agent, called antigen, via variable region.

Q.11 Answer is "Phagocytes"

Explanation: Antibodies tag the foreign cells and help phagocytes identify and destroy them.

Q.12 Answer is "Antivenome serum"

Explanation: A serum containing antibodies against venome.

Q.13 Answer is "Bacterial disease or cancer"

Explanation: Because his/her immune system fails to defend him/her.

Q.14 Answer is "AIDS"

Explanation: No cure have been discovered or developed for AIDS so far.

Q.15 Answer is "Passive immunization"

Explanation: As antibodies are being introduced into the body, so it is passive immunization.

Q.16 Answer is "Passive immunization"

Explanation: Antirabies serum contains antibodies against rabies and injection of antibodies to somebody is called passive immunization.

Q.17 Answer is "Passive immunization"

Explanation: Anti tetanus serum contains antibodies against tetanus (*Clostridium tetani*), thus injection of anti-tetanus serum is a source of passive immunization.

Q.18 Answer is "Attaching antibodies to the surface of bacteria"

Explanation: Antibodies are synthesized and liberated into the blood by plasma cells, however, they do not attach them. Antibodies are attached themselves, to the surface of bacteria.

Q.19 Answer is "Anthrax"

Explanation: Pasteur made many discoveries concerning the cause and prevention of infectious diseases. In 1880s he isolated the bacterium responsible for chicken cholera. He grew it in a pure culture. To prove that he really had isolated the bacterium responsible for this disease Pasteur made use of the fundamental techniques devised by Koch. He arranged experiments for public demonstration in which he repeated an experiment that had been successful in many previous trails in his laboratory. Unluckily his demonstration failed badly, as he had used an attenuated culture for that. It was accidentally proved that attenuated culture of some pathogenic bacteria will be unable to cause infection, however it will be capable enough to stimulate the immune system to synthesize antibodies.

Pasteur next applied this principle of inoculation with attenuated cultures to the prevention of Anthrax.

Q.20 Answer is "Attenuated cultures of bacteria"

Explanation: Louis Pasteur called the attenuated cultures of bacterial vaccine and immunization with attenuated cultures of bacteria vaccination.

Q.21 Answer is "Neutrophils"

Explanation: Once pathogens are able to neutralize the responses from the first line of defense i.e. skin and mucous membrane and are bale to penetrate inside the body they are encounter by the second line of defense which is nonspecific because it handles a variety of microbes. Nonspecific defense includes macrophages, neutrophils, natural killers cells, the complement system etc.

Q.22 Answer is "Sweat gland, Dermis and Epithelium"

Explanation: Our first line of defense is nonspecific and includes structures, chemicals and processes that work to prevent pathogens entering the body. These first line defenders include the skin and mucous membranes of the respiratory, digestive, urinary and reproductive systems. Skin is comprised of two main layers

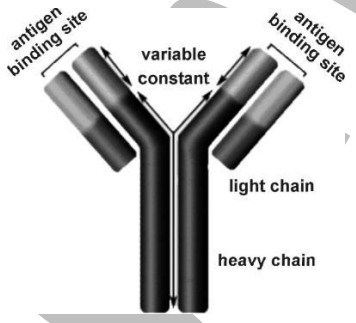
- Epidermis
- Dermis

Q.23 Answer is "HCl in stomach"

Explanation: Proper levels of HCl in the stomach are our first line of defense against bacterial and viral infections.

Q.24 Answer is "Y"

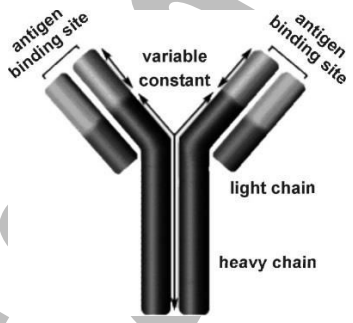
Explanation:



Each antibody consists of four polypeptides – two heavy chains and two light chains joined to form a "Y" shaped molecule.

Q.25 Answer is "Four"

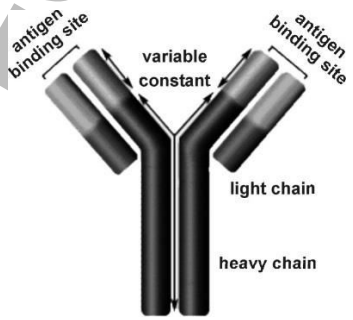
Explanation:



Each antibody consists of four polypeptides – two heavy chains and two light chains joined to form a "Y" shaped molecule.

Q.26 Answer is "Two"

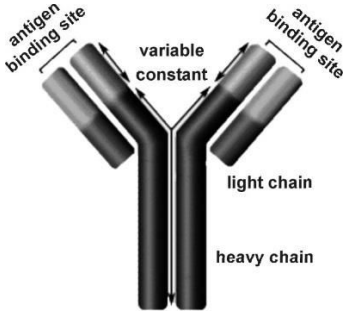
Explanation:



Each antibody consists of four polypeptides – two heavy chains and two light chains.

Q.27 Answer is "Two"

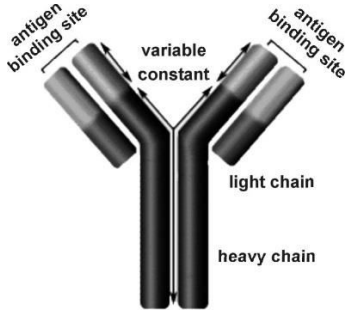
Explanation:



Each antibody consists of four polypeptides – two heavy chains and two light chains.

Q.28 Answer is "Variable part"

Explanation:



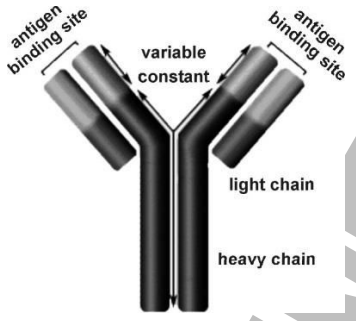
The variables region, composed of 110-130 amino acids, give the antibody its specificity for binding antigen. The variable region includes the ends of the light and heavy chains.

Q.29 Answer is "Both heavy and light chains"

Explanation: The variable region includes the ends of the light and heavy chains.

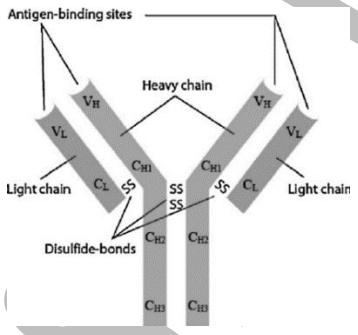
Q.30 Answer is "Upper region"

Explanation:



Q.31 Answer is "Disulphide bonds"

Explanation:



An antibody molecule consists of four polypeptide chains – two identical light chain and two identical heavy chains – linked by disulfide (-S – S -) bridges.

Q.32 Answer is "Antigen"

Explanation: Any substance that elicits an immune response, by inducing production of antibodies is called antigen.

Q.33 Answer is "B-cells"

Explanation: B-cells recognize antigen and form plasma cell clone. These plasma cells synthesize and liberate antibodies into the blood plasma and tissue fluid.

Q.34 Answer is "Antigen"

Explanation: Any substance that elicits an immune response, by inducing production of antibodies is called antigen.

Q.35 Answer is "Antigen"

Explanation: Any substance that elicits an immune response, by inducing production of antibodies is called antigen.

Q.36 Answer is "Immunity"

Explanation: The capacity to recognize the intrusion of any material foreign to the body and to mobilize cells products to help remove the particular sort of foreign material with greater speed and effectiveness is called immunity.

Q.37 Answer is "Immunology"

Explanation: The study of our protection from foreign macro molecules or invading organisms and our responses to them is called immunology.

Q.38 Answer is "Antibody"

Explanation: Globular blood proteins that are produced by B-lymphocytes and that bind specifically to foreign antigenic materials in the body and destroy them is called antibody.

Q.39 Answer is "Lymphocytes"

Explanation: Lymphocytes of the immune system which responds to foreign substance; some time secrete antibodies.

Q.40 Answer is "Immunology"

Explanation: The branch of Biology which is the study of our protection from foreign macromolecules or invading organisms and our responses to them is called immunology.

Q.41 Answer is "Malaria"

Explanation: Malarial vaccine is not available.

Q.42 Answer is "Immune response"

Explanation: The body's response to foreign particles, such as the production of antibodies directed against a specific antigen, is called immune response.

Q.43 Answer is "T-lymphocytes"

Explanation: Natural killer cells are the type of T-lymphocytes. They are also called cytotoxic T-cells. In general, natural killer cells do not directly attack invading microbes.

Q.44 Answer is "Cytotoxin T cells"

Explanation: these cells secrete cytotoxin which triggers destruction of the pathogen's DNA or perforin which is a protein that creates holes in the pathogens plasma membrane. The holes cause the pathogen to lyse (rupture).

Q.45 Answer is "Antibodies"

Explanation: Antibodies (also called immunoglobulin or Ig's) are Y-shaped proteins that circulate through the blood stream and bind to specific antigens, thereby attacking microbes. The antibodies are transported through the blood and the lymph to the pathogen invasion site.

Q.46 Answer is "Blood, lymph"

Explanation: The antibodies are transported through blood and the lymph to the pathogen invasion sites.

Q.47 Answer is "Natural active immunity"

Explanation: Natural active immunity is the kind of immunity, which is obtained as a result of an infection. The body manufactures its own antibodies when exposed to an infectious agent. This type of immunity is most effective and generally persists for a long time, sometimes even for life.

Q.48 Answer is "Antibodies"

Explanation: In contrast to active immunity, in which case antigens are introduced to stimulate the production of antibodies, by artificial or natural method; antibodies are injected in the form of antisera, to make a person immune against a disease. This is called passive immunity.

Q.49 Answer is "B-lymphocytes"

Explanation: B-cells recognize antigen and form plasma cell clone. These plasma cells synthesise and liberate antibodies into the blood plasma and tissue fluid. Here antibodies attach to the surfaces of bacteria and speed up their phagocytosis, or combine with and neutralise toxins produced by micro-organisms, by producing antitoxins. This is called humoral Immune response..

Q.50 Answer is "Passive immunity"

Explanation: In contrast to active immunity, in which case antigens are introduced to stimulate the production of antibodies, by artificial or natural method; antibodies are injected in the form of antisera, to make a person immune against a disease. This is called passive immunity.

STEP

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