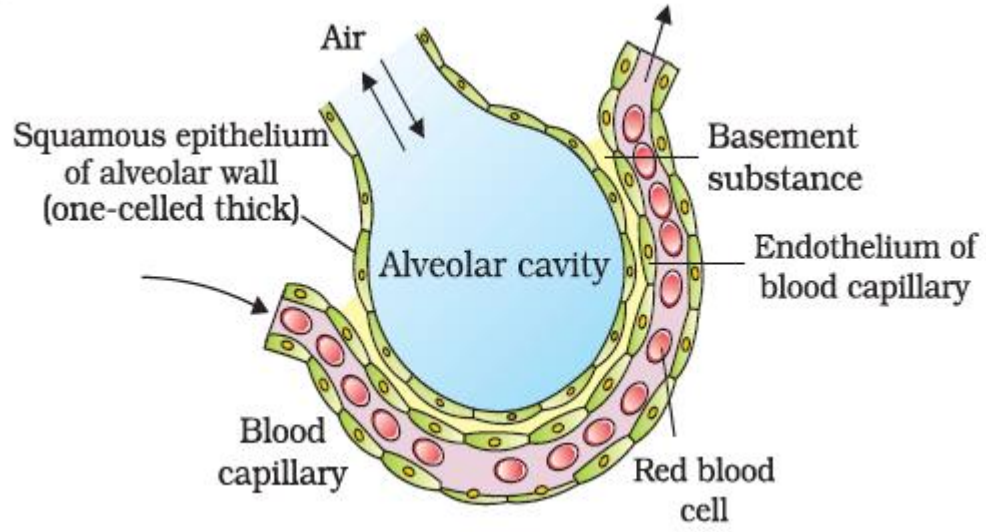
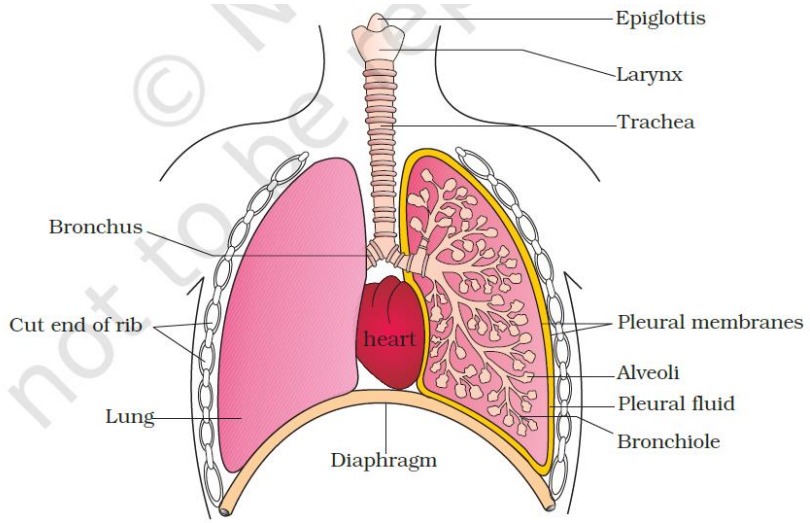
INDIAN SCHOOL MUSCAT

NAME OF THE EXAMINATION	FIRST PERIODIC TEST	CLASS: XI
DATE OF EXAMINATION	12.09.2022	SUBJECT: BIOLOGY
TYPE	MARKING SCHEME	

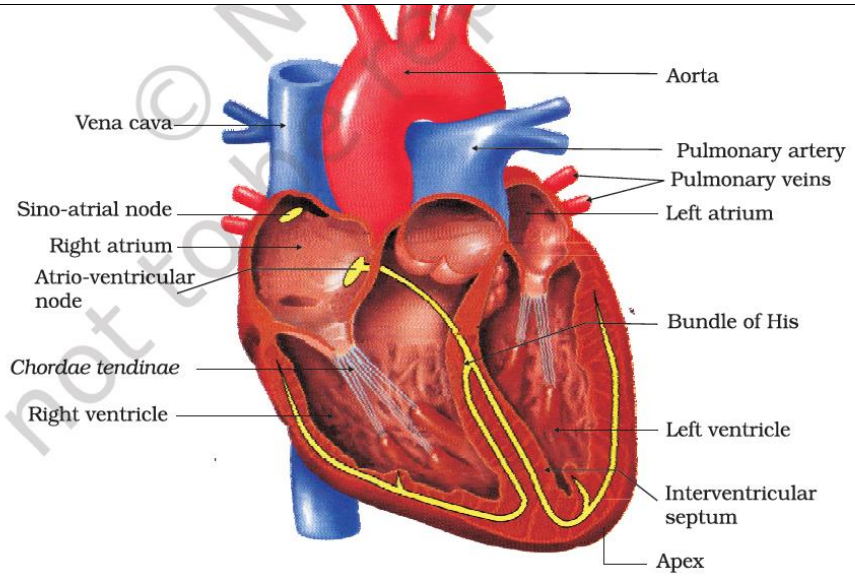
SET	Q.NO	VALUE POINTS	MARK
A	1.	b) Vertebral column (or) (c) A is true, but R is false	1
A	2.	process of exchange of O2 from the atmosphere with CO2 produced by the Cells.	1
A	3.	serum	1
A	4.	Neutrophils	1
A	5.	(i) Diaphragm muscles - relaxes (ii) Internal intercostal muscles -relaxes	2
A	6.	high pO2, low pCO2, lesser H+ concentration and lower temperature	2
A	7.	Fishes have a 2-chambered heart with an atrium and a ventricle. The heart pumps out deoxygenated blood which is oxygenated by the gills and supplied to the body parts from where deoxygenated blood is returned to the heart (single circulation). Or ATRIOLE systole The SAN generates an action potential which stimulates both the atria to undergo a simultaneous contraction./ the tricuspid and bicuspid valves are pushed open by the pressure in the atria exerted by the blood which was being emptied into them by the veins.	2
A	8.	No. as antigen and antibodies interact. Agglutination occurs. Blood does not flow.	2

A	9.	140/90; High blood pressure leads to heart diseases and also affects vital organs like brain and kidney.	2
A	10.	 Diagram – 1 mark ; any 4 parts -1 mark OR as carbamino-haemoglobin as bicarbonate as dissolved form	3
A	11.	Open circulatory system, in which blood pumped by the heart passes through large vessels into open spaces or body cavities called sinuses. Closed circulatory system, in which the blood pumped by the heart is always circulated through a closed network of blood vessels. Closed circulatory system more advantageous as the flow of fluid can be more precisely regulated.	3

SET	Q.NO	VALUE POINTS	MARK
B	1.	a) Sternum OR c) A is true, but R is false	1
B	2.	By GILLS	1
B	3.	RBC/erythrocytes	1
B	4.	ABO and Rh grouping	1
B	5.	(i) Breathing or pulmonary ventilation by which atmospheric air is drawn in and CO2 rich alveolar air is released out. (ii) Diffusion of gases (O2 and CO2) across alveolar membrane. (iii) Transport of gases by the blood. (iv) Diffusion of O2 and CO2 between blood and tissues.	2
B	6.	Respiratory rhythm centre present in the medulla region of the brain is primarily responsible for regulation. The centre present in the pons region of the brain called pneumotaxic centre can moderate the functions of the respiratory rhythm centre. Neural signal from this centre can reduce the duration of inspiration and thereby alter the respiratory rate. Role of chemosensitive area	2
B	7.	caused by deposits of calcium, fat, cholesterol and fibrous tissues/makes the lumen of arteries narrower/ affects the vessels that supply blood to the heart muscle. OR SAN→AVN→Bundle of HIS→purkinjee fibres	2
B	8.	function of a) basophils - involved in inflammatory reactions b) Eosinophils - resist infections/ allergic reactions	2
B	9.	During the delivery of the first child, there is a possibility of exposure of the maternal blood to small amounts of the Rh+ve blood from the foetus. the mother starts preparing antibodies against Rh antigen in her blood.	2

		In case of her subsequent pregnancies, the Rh antibodies from the mother (Rh-ve) can leak into the blood of the foetus (Rh+ve) and destroy the foetal RBCs.	
B	10.	Branched alveoli- more area for exchange/ thin walled- easy diffusion/rich supply of blood vessels – for transport of gases. OR  Diagram – 1m ; any four parts - 2	3
B	11.	Heart failure : Heart is not pumping blood effectively enough to meet the needs of the body Cardiac arrest : heart stops beating Heart attack: The heart muscle is suddenly damaged by an inadequate blood supply.	3

SET	Q.NO	VALUE POINTS	MARK
C	1.	c) ribs	1
C	2.	pharynx	1
C	3.	Thrombocytes or Larynx→glottis→epiglottis(guarded by)	1
C	4.	By administering anti-Rh antibodies to the mother immediately after the delivery of the first child.	1
C	5.	Grinding or stone-breaking industry/ inflammation and it will be leading to fibrosis (proliferation of fibrous tissues) and thus causing serious lung damage.	2
C	6.	aortic arch and carotid artery/ send necessary signals to the rhythm centre for remedial actions.	2
C	7.	a) Ventricular diastole b) any deviation from this shape indicates a possible abnormality or disease of the heart.	2
C	8.	Lub and dub. Closure of valves.	2
C	9.	During a cardiac cycle, each ventricle pumps out approximately 70 mL of blood which is called the stroke volume. The stroke volume multiplied by the heart rate (no. of beats per min.) gives the cardiac output. Therefore, the cardiac output can be defined as the volume of blood pumped out by each ventricle per minute and averages 5000 mL	2
C	10.	Blood passes through the capillaries in tissues some water along with many small water soluble substances move out into the spaces between the cells of tissues leaving the larger proteins and most of the formed elements in the blood vessels. immune responses of the body/ carrier for nutrients, hormones/ Fats are absorbed through lymph in the lacteals present in the intestinal villi. OR	3

			
C	11.	$CO_2 + H_2O \xrightleftharpoons{\text{Carbonic anhydrase}} H_2CO_3$ Oxygen dissociation curve Formation of oxyhemoglobin high pO2, low pCO2, lesser H+ concentration and lower temperature Dissociation of oxygen from RBC low pO2/high pCO2/high H+ concentration/ higher temperature	3