DPP
DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 9

Topic :- Body Fluids and Circulation

1 **(d)**
Pulmonary artery differs from pulmonary vein in having thick muscular wall. The veins have internal semilunar valve to prevent backflow of blood.

2 **(a)**
Capillaries were discovered by **Marcello Malpighi** in 1661. These are very thin-walled, because tunica externa and tunica media are absent. Capillary wall is formed by only tunica interna or endothelium. These connect arterioles to venules and specialized for exchanging substances with interstitial fluid. According to local tissue requirements, these can be constricted or dilated.

3 **(c)**
Time taken for the normal blood clotting varies from 4-10 min

4 **(b)**
Universal Donor = O blood group
Universal receipient = AB blood group

5 **(d)**
Both a and b.
A special case of Rh incompatibility has been observed between Rh — ve blood of pregnant mother with Rh +ve blood of foetus. During the delivery of the first child there is a possibility of exposure of the maternal blood to small amount of Rh +ve blood from foetus.
In such cases, the mother starts preparing antibodies against Rh antigen in her blood. In the case of her subsequent pregnancies, the Rh antibody from the mother can leak to blood of foetus and destroy foetal RBC. This could be fatal to foetus or could cause severe anaemia and jaundice to the foetus. This condition in called erythroblastosis foetalis

6 **(d)**
Blood platelets occur only in mammals. They are non-nucleated, round or oval biconvex and bud from megakaryocytes. They are much smaller than RBC. Blood platelets are the source of thromboplastin, necessary for blood clotting

7 **(c)**

1. Inferior vena cava – Receives deoxygenated blood from the lower body and organs
2. Superior vena cava – Receives deoxygenated blood from the head and body
3. Pulmonary artery - Carries deoxygenated blood to the lungs
4. Hepatic artery - Carries deoxygenated blood to the liver
5.

8 **(a)**

A-12-16, B-100, C-Respiratory

9 **(c)**

As the ventricle is completely divided in birds, mammals and some reptiles (crocodiles, alligator), the left and right parts of the heart function as air tight conduits for pure and impure blood. The right part receives impure blood from whole body and sends it to the lungs for oxygenation. The left part receives purified blood from the lungs and supplies it to the whole body. Thus, the right and left parts of the heart respectively serve as completely separated pulmonary and systemic hearts. This is known as double heart circuit. In man, the rate of heart beat (double circulation) is about 75 times per minute.

10 **(c)**

The pressure exerted by the flow of blood on the elastic walls of the arteries is called blood pressure. Blood pressure is greater during the systole than during the diastole. Maximum pressure of blood experienced during entery of blood from left ventricle to aorta.

11 **(d)**

In the cardiac cycle, the first stage begins with the joint diastole. In that, four chambers of the heart are in relaxed state. As the tricuspid and bicuspid valves are open, blood from the pulmonary veins and vena cava flows into the left and right ventricle respectively, through the left and right atria. The semilunar valves are closed at this stage

12 **(d)**

Both a and b.

Lymph is a colourless fluid containing specialised lymphocytes (B and T cells) which are responsible for the immune response of the body. Lymph is also an important carrier for nutrients and hormones, etc. Fats are absorbed by the lymph in the lacteals present in the intestinal villi

13 **(b)**

Chordae tendinae are string-like processes in the heart that attach the edges of the bicuspid and tricuspid valves to the walls of the ventricles, prevent them from being forced back into the atria when the ventricles contract.

14 **(c)**

All living cells have to be provided with nutrients, O_2 and other essential substances. Also the waste or harmful substances produced have to be removed continuously. Different group of animals have evolved different method for this transport. Simple organism like sponges and coelenterates circulate water from their surroundings through their body cavities to facilitate the cells to exchange these substances

15 **(c)**

All the site of injury, blood platelets disintegrates and release thromboplastin

16 **(c)**

Both (bicuspid and tricuspid) valves are connected below to the walls of ventricles by chordae tendinae. They prevent the valves from turning inside out or from being forced upward during the contraction of ventricles

17 **(d)**

In the given diagram, D represents the vena cava

18 **(c)**

The life span of biconcave RBCs in man is about 120 days, whereas in frog (biconvex RBCs) is 100 days and in rabbit it is 80 days.

19 **(b)**

Formed elements constitutes about 45% of blood

20 **(c)**

Neural signals through the sympathetic nerves (part of ANS) can increase the rate of heartbeat by the strength of the ventricular contraction of cardiac output

ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**d**	**a**	**c**	**b**	**d**	**d**	**c**	**a**	**c**	**c**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**d**	**d**	**b**	**c**	**c**	**c**	**d**	**c**	**b**	**c**