

1. Answer the following with reference to mammalian heart :
 - (i) What are SA node and AV node ? What are their roles ?
 - (ii) How do vagus nerve and the sympathetic nerve fibres influence the heart rate ?
 - (iii) How do the sounds "LUBB" and "DUP" indicate in the activity of heart ?
2. The heart rates of an elephant, a jawaman and a mouse are nearly 25, 72 and more than 200 per minute respectively.
 - (i) What conclusion can you draw from these observations ?
 - (ii) What is the significance of this difference in the heart rate ?
3. How does the blood differ in its components when it enters the lungs in a mammal and when it leaves them ?
4. Why is it an advantage in birds and mammals for oxygenated blood to flow to the tissue under high pressure ?
5. Why is numbness of feet or leg caused when a person stands immobile for a long time ?
6. A cardiologist observes an elevated ST segment in the ECG of the patient. What is it indicative of ?
7. Define a portal vein. Explain the functions of such a vein in our digestive system.