

Q Discuss the advantages & disadvantages of a closed circulatory system.

Advantages of closed circulatory system are:-

- \* It is efficient in delivering oxygen throughout an organism.
- \* It provides more power energy in the form of ATP.
- \* It has a lymphatic system that works separately.

Disadvantages are :-

- \* It is more complex than the open circulatory system.
- \* It requires more energy for blood distribution.

Q The digestive system in humans is intermediate between that of strict carnivores & that of strict herbivores. How might you expect to be your digestive system to be different if we had fed exclusively on plant tissue through our evolutionary history?

A The teeth of herbivores are flat & have less sharpness than that of carnivores who have sharp teeth for tearing flesh. Thus, the humans would have also flat teeth like the herbivores.

\* Certain herbivores have special bacteria for digesting cellulose. Thus, these bacteria would have been present in humans while consuming only plant tissue.

\* Carnivorous animals have more acid in their stomach for better digestion of proteins than herbivores. Thus humans would also have less prot. acid in their stomach.

Q Explain why we become warm during exercise & explain the usefulness of shivering when it is cold.

A The human body shows homeostasis (impact on body in response to the change in external environment).

\* During exercise, the body puts a lot of extra stress on itself. As a result the muscles start contracting & relaxing & a lot of energy in the form of ATP is utilised during this process. This increases the heart beat of body.

\* So, the body heat increases subsequently, to help cool itself, the body sends more blood to circulate through the skin. This leaves less blood ~~to use~~ for our muscles & increases the heart rate making body warm.

\* It also becomes warm as sweat is produced as a result of exercises. This gets evaporated & the body cools down in order to maintain body temp; the body heats up.

Shivering is a function of body in warm-blooded animals in response to cold.

\* When the core body temp. drops we shiver automatically as this reflex is triggered to maintain homeostasis.

- \* A shiver is caused by skeletal muscle contractions to generate heat during cold. This rapid muscle contraction & relaxation in succession involuntarily causes the body to warm up.
- \* So, shivering is useful as the body temp. raises up to optimum due to the involuntary muscle movements of body in response to outer environment (cold).
- So it is quite useful for the body.

Q state T or F

- a) The loss of water vapour by a plant is called as transpiration. True
- b) Translocation is the transportation of the products of photosynthesis. True
- c) Stretching of inner wall of guard cells, open the stomata. True
- d) Arteries are the widest blood vessels. True
- e) Bowman's capsule is found in heart. False