HOLIDAY HOMEWORK

D) Discuss the advantages and disadvantages of a closed circulatory system.

Ans: ADVANTAGES

- Blood travels faster in a closed system, thus O_2, nutrients & wastes travel faster too. Thus transport of O_2 is efficient
- The closed circulatory system operates with much higher blood pressure which is efficient.
- Due to efficient distribution of antibodies, immune responses are stronger, helping the body to fight off an infection more effectively

DISADVANTAGES

- It requires much blood pressure and more energy for distribution and thus is not suited for animals with slower metabolism & smaller bodies.

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- The closed circulatory system is more complex than open circulatory system.

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

Ans ★ The digestive system of human beings is intermediate between herbivores & carnivores

★ So, the digestive system in human beings would have certain features-

(i) The teeth of herbivores are flater and have apparently less sharpness to them in comparision to carnivores who have pointed teeth for tearing flesh. Therefore, the teeth of human beings would be more like herbivores rather than having sharp canines.

(ii) The carnivorous animals have more acidic stomach for better digestion of proteins than herbivores. So, humans eating only plant product would have less acids in their stomach.

(iii) Certain herbivores have special bacteria in their gut for digesting cellulose out of plant goods. This might have been present in humans before evolving into omnivores.

(iv) Herbivores process energy from the plant products that they eat & carnivores get the energy from herbivores. So, it is less.

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

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

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★ During exercises ; the body puts a lot of extra stress on itself. As a result of exercising, the muscles start contracting and relaxing a lot and a lot of energy in form of ATP is utilised during this process. This increases the heart beat of body.

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

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

★ Shivering is a bodily funition in response to cold in warm - blooded animals.

★ When the core body temperature drops,

we shiver automatically as this reflex is triggered to maintain homeostasis

★ A shiver is caused by skeletal muscles 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 temperature 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

4. State true or false :-

(a) The loss of water vapor by plant is called transpiration. True

(b) Translocation is the transportation of the products of photosynthesis. True

(c) Stretching of inner wall of guard cells, Open the stomata. False

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(d) Arteries are the widest blood vessels.
False

(e) Bowman's capsule is found in heart.
False.