



Q1(A))

- (1) dialysis
- (2) Mendel
- (3) abscisic acid

(B))

- (1) Transpiration pull
- (2) sickle cell anaemia and haemophilia

Q2(A))

- (1) i. Molecules of DNA are present in all the organisms i.e. from viruses and bacteria to human beings.
ii. The molecules which control the functioning, growth and division of the cell are called 'Master Molecules'.
iii. DNA molecules not only control the functioning of the cell but also control their growth, development as well as division (reproduction).
iv. Therefore, DNA molecules are called Master molecules.
- (2) i. Alcohol can damage nerve function when it accumulates inside the body, a serious form of nerve damage.
ii. Alcohol interacts with the CNS, especially with cerebellum which is responsible for maintaining body balance.
iii. Also the other parts of brain are affected due to which voluntary actions become uncontrolled and thus brain loses the control over the body.
iv. Hence, an excess of alcohol in the body causes one to lose control over itself.

(B))

(1) Disorder	Reason for the disorder
Klinefelter syndrome	Chromosomal abnormality
Constricted stomach	Multiple genes mutation
Sickle-cell anaemia	Single gene mutation
Turner syndrome	Chromosomal abnormality

- (2) (1) In the space between the delicate central nervous system and its bony covering are the protective layers called the meninges.
- (2) Movements shown by plants in response to specific chemicals is called chemotropic movement.

Q3)

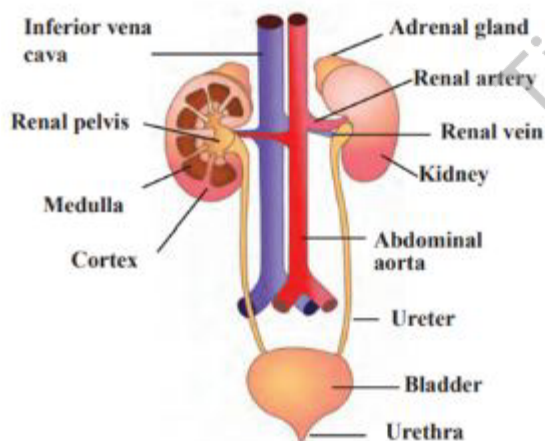
- (1) 1990, Celera Genomics Corporation, DNA sequence, 20,000 to 30,000, diagnosis, treatment
- (2) leaves, amino acids, fruits, seeds, translocation of materials, phloem
- (3) i. In multicellular organisms, there is co-ordination between the different organ systems or organs and the stimuli in the surrounding.
ii. Depending upon this, we can say that systematic regulation of different processes can be called control and bringing about the different processes in the proper sequence can be called co-ordination.
iii. If any activity in the body is to be completed successfully, proper co-ordination between different systems

and organs participating at different steps of that activity is necessary.

- iv. If due to lack of co-ordination or some other factor, there is confusion at any step the activity may not get completed. There should not be any randomness at any step.
- v. There needs to be proper co-ordination between internal activities of the body resulting from various factors like body temperature, water-level, enzyme-level, etc. or stimuli arising in the surrounding environment.
- vi. Proper co-ordination between various systems of an organism helps to maintain a state of equilibrium called 'homeostasis' which is necessary for the optimal efficiency of the body.

Q4)

- (1) i. Excretion is the process of elimination of toxic and nitrogenous waste products from the body.
- ii. In human beings, excretory system carries out the function of excretion.
 - iii. The human excretory system consists of a pair of kidneys, a pair of ureters, the urinary bladder and the urethra.
 - iv. Kidneys separate the waste and unwanted excess substances from the blood and form urine. If these unwanted products are allowed to accumulate in the body for a long time, they cause serious damage, even leading to death at times.
 - v. Nephron, the functional unit of kidneys performs the basic function of filtration.
 - vi. Urea containing blood enters the glomerulus where it is filtered through capillaries. Thus, urea and other substances get separated from the blood.
 - vii. Water and some other small molecules have the ability to cross semipermeable membrane of Bowman's capsule.
 - viii. The solution accumulated in the cavity of Bowman's capsule passes into the tubular part of the nephron where water and some other useful substances are reabsorbed into the blood.
 - ix. Urine formed from remaining solution of waste materials is carried by ureters and stored in the urinary bladder.
 - x. This urine is then given out through urethra.
 - xi. Human beings are able to keep a control on urination as the urinary bladder is under the control of nerves.
 - xii. Though kidneys are the main organs of excretion but skin and lungs also help in excretion in humans.



- (2) (1) Nicotine present in tobacco leads to harmful effects.
- (2) By chewing and by smoking.
 - (3) Excessive tobacco consumption may cause cancer of lips or tongue, visual disorders or tremors.
 - (4) Tobacco smoke is full of minute carbon particles which causes normal tissue of the lung to transform into thickened black tissue.
 - (5) Tobacco smoke contains harmful chemicals like pyridine, ammonia, aldehyde furfural, carbon monoxide, nicotine, sulphur dioxide, etc.

All the Best