



Q1(A))

- (1) scorpion
- (2) coffee
- (3) Tarapur
- (4) planaria
- (5) mutation

(B))

- (1) Peripatus Others are examples of vertebrates.
- (2) World Health Organisation
- (3) Insulin
- (4) True
- (5) 1) - b

Q2(A))

- (1) i. Renewable energies are the energies obtained from the renewable source that are inexhaustible sources.
ii. These energy sources can be used for a long span of time which cause less or no pollution.
iii. Hydroelectric energy uses water force for energy generation which can be used again and again for simultaneous electric power production.
iv. Wind energy similarly makes use of wind velocity to produce electrical energy and wind cannot be depleted.
v. Also solar energy uses sunlight and solar radiations to produce electric power which is again a neverending source of energy.
vi. As these energies can be produced, without the need of conservation can be utilized, these sources are renewable sources and energy produced is renewable energy.
- (2) i. Tortoise creeps on land as it cannot lift its body up.
ii. Unlike amphibians, the skin of tortoise is dry and scaly.
iii. Neck is absent in amphibians but in tortoise, neck is present between the head and trunk.
iv. The digits of tortoise have claws, which are absent in amphibians. Thus, tortoise cannot be included in class amphibia though it lives on land as well as in water and is included in class reptilia.
- (3) i. While heavy exercising the muscle cells start to perform anaerobic respiration.
ii. During anaerobic respiration in muscle cells, lactic acid accumulates in the body.
iii. Lactic acid accumulation is a result of the fermentation process, during which glucose is broken down by anaerobic respiration, forming organic acids.
iv. Also, the production of ATP is comparatively less than aerobic during anaerobic respiration. Hence, we feel tired after exercise.

(B))

- (1) 1. Social Safety
2. Education
3. Financial Status
4. Residential Area
- (2) i. Pre-disaster phase

- ii. Warning phase
- iii. Emergency phase
- iv. Rehabilitation phase
- v. Recovery phase
- vi. Reconstruction phase

- (3)** i. DNA sequence pattern of every individual is unique as that of the fingerprints.
 ii. Due to this, the identity of a person can be established with the help of DNA sample. This is called as DNA fingerprinting.
 Uses of DNA fingerprinting:
 1. At a crime scene, any source of DNA found can be used to establish the identity of the criminals.
 2. Also, paternity testing or the identity of a child's parent can be established using DNA fingerprinting.
- (4)** i. Methane, ethanol, hydrogen gas, etc. are fuels obtained by microbial processes.
 ii. It is necessary to increase the usage of such fuels in order to reduce exhaustion of fossil fuels.
 iii. When methane is burnt less amount of smog-forming pollutants, toxic contaminants and gases are generated.
 iv. Ethane is clean fuel. It is obtained during fermentation of molasses by saccharomyces (yeast).
- (5)** i. Cancerous ulceration occurs due to higher radiation of X-rays.
 ii. Tissues in the body are destroyed.
 iii. Genetic changes occur.
 iv. Vision is adversely affected.

Q3)

- (1)** (a) Phylum – Echinodermata Example: Starfish, sea cucumber, sea urchin, brittle star, etc.
 (b) Phylum – Aschelminthes Example: Ascaris, Loa-Loa, Filarial worm, etc.
 (c) Class – Pisces Example: Shark, Rohu fish, Pomfret, Sting ray, etc.
- (2)** (1) Stem cells: These are specialised cells that give rise to all other types of cells present in the body of multicellular organisms.
 (2) Cloning: It is the process of production of replica of any cell or organ or an entire organism. Fusion of a nucleus of somatic cell with the enucleated ovum to form a complete new organism is known as reproductive cloning.
 (3) Genetically modified crops: Crops developed with desired character by integrating foreign gene with the help of genetic engineering are called as genetically modified crops, e.g., Bt cotton, Bt Brinjal.
- (3)** (i) Material collecting
 (ii) Dancing
 (iii) Cooking
 (iv) Drawing
 (v) Singing
 (vi) Photography
- (4)** (1) The given diagram is of wind mill.
 (2) Wind is used as the source of energy in this process.
 (3) This source is eco-friendly because it is renewable source of energy and does not emit harmful substances or pollutants.
- (5)** (1) Degenerated or undeveloped, useless organs of organisms are called as vestigial organs.
 (2) Vestigial organs in humans are: 1. Appendix, 2. Wisdom teeth, 3. Ear pinna, 4. Tail-bone, (Any two)
 (3) (1) Appendix is fully functional in ruminants for digestion of cellulose.
 (2) Ear pinna is useful in many animals like rabbits, cows, horses, etc.
- (6)** petroleum, fatal, mechanical method, pyridines, oxygen, CO₂
- (7)** i. Hand gloves
 ii. Antiseptic
 iii. Scissor
 iv. Bandages
 v. Band aids
 vi. Medicated cotton

- (8)** (1) Vitamins are a group of heterogeneous compounds which are essential for the proper operation of various life processes.
- (2) Vitamins can be classified into two types: Water soluble vitamins: These vitamins cannot be stored in body, the excess amount is excreted in urine and significant amount of vitamins need to be consumed regularly. Fat soluble vitamins: They are absorbed with fat and stored in fatty tissue and liver.
- (3) Water soluble : B, C Fat soluble : A, D, E, K

Q4)

- (1)** (a) Testes
(b) 60 micrometres
(c) Vas deferens transports mature sperm from the epididymis to urethra.
(d) Meiosis type of cell division by which sperms are formed.
(e) Prostate gland, penis.
- (2)** (a) Endangered species, Rare species, Vulnerable species, Indeterminate species
(b) (1) Protecting the rare species of organisms.
(2) Establishing national parks and sanctuaries.
(3) Conserving all plants and animals.
(4) Observing the biodiversity protection rules.
(5) Declaring some regions are 'bioserves'.
(6) Projects for conservation of special species.
(7) Maintaining record of traditional knowledge.
(c) Pink colour, Green colour

All the Best

TickMark.Ai