



CURRENT AFFAIRS MCQs 17-09-23

QUES1.

Consider the following statements:

1. Ecotone is a zone of junction between two or more diverse ecosystems.
2. Ecotone is always larger than a biome.
3. A well-developed ecotone may contain some unique organisms which might be absent in the adjacent ecosystems.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: (B)

Explanation: Ecotone is a zone of junction between two or more diverse ecosystems. For e.g. the mangrove forests represent an ecotone between marine and terrestrial ecosystem. It may be very narrow or quite wide, but not larger than a biome which is a much larger entity. Well-developed ecotones contain some organisms which are entirely different from that of the adjoining communities. Hence, statement 2 is incorrect.

QUES2.

Consider the following statements regarding the benefits of Pulses on Environment:

1. Pulses perform biological fixation of environmental nitrogen.
2. Pulses enhance soil fertility and reduce the consumption of major fertilisers required for the cultivation of food crops.
3. The roots of pulses and legumes contain soil enriching bacteria collectively known as Rhizobium.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: (D)



Explanation: The roots of pulses and legumes contain soil enriching bacteria collectively known as Rhizobium. Therefore pulses perform biological fixation of environmental nitrogen. They also increase organic matter in the soil, improve quality and maintain its biodiversity. Pulses enhance fertility and reduce the consumption of major fertilisers required for the cultivation of food crops by millions of tonnes globally. Hence, all statements are correct.

QUES3.

Consider the following statements:

1. Chemosynthetic bacteria obtain their energy from the oxidation of inorganic molecules.
2. Chemosynthetic bacteria cannot survive without the presence of sunlight.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (A)

Explanation: The energy required for the life within the biosphere usually comes from the sun. But Chemosynthetic bacteria are organisms that use inorganic molecules as a source of energy and convert them into organic substances. They do not need sunlight for their survival. Chemosynthetic bacteria, unlike plants, obtain their energy from the oxidation of inorganic molecules, rather than photosynthesis. Chemosynthetic bacteria use inorganic molecules, such as ammonia, molecular hydrogen, sulfur, hydrogen sulfide and ferrous iron to produce the organic compounds needed for their subsistence. Most chemosynthetic bacteria live in environments where sunlight is unable to penetrate and which are considered inhospitable to most known organisms. Hence, statement 2 is incorrect.

4. Consider the following statements:

1. In the aquatic environment, the sediment-characteristics often determine the type of benthic animals that can thrive there.
2. Like humans, plants also have mechanisms to maintain internal temperature.
3. Very small animals are rarely found in Polar Regions since thermoregulation is energetically expensive for these animals.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three



(d) None

Answer: (B)

Explanation:

The mechanisms used by most mammals to regulate their body temperature are similar to the ones that we humans use. We maintain a constant body temperature of 37 degree Celsius. In summer, when outside temperature is more than our body temperature, we sweat profusely.

The resulting evaporative cooling, similar to what happens with a desert cooler in operation, brings down the body temperature. In winter when the temperature is much lower than 37°C, we start to shiver, a kind of exercise which produces heat and raises the body temperature. Plants, on the other hand, do not have such mechanisms to maintain internal temperatures.

Thermoregulation is energetically expensive for many organisms. This is particularly true for small animals like shrews and humming birds. Heat loss or heat gain is a function of surface area. Since small animals have a larger surface area relative to their volume, they tend to lose body heat very fast when it is cold outside; then they have to expend much energy to generate body heat through metabolism. This is the main reason why very small animals are rarely found in Polar Regions.

Hence, statement 2 is incorrect.

QUES5.

Which of the following are the key elements that lead to variation in the physical and chemical conditions of different habitats?

1. Temperature
2. Pathogens
3. Soil
4. Predators
5. Competitors
6. Light

How many of the above options are correct?

- (a) Only three
- (b) Only four
- (c) Only five
- (d) All six

Answer: (D)

Explanation: The most important ones are temperature, water, light and soil. We must remember that the physico-chemical (abiotic) components alone do not characterise the habitat of an organism completely; the habitat includes biotic components also – pathogens, parasites,



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predators and competitors – of the organism with which they interact constantly. Hence, all are correct.

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