GS Test 20 (29th May 2022) (SOLUTION)

27. Correct Answer B

Explanation :

- Aquaponics is a **hybrid food growing technology** that combines **aquaculture** (growing fish) and **hydroponics** (growing crops in non-soil media and nutrient-laden water). Fish waste from the aquaculture portion of the system is broken down by bacteria into dissolved nutrients (e.g., nitrogen and phosphorus compounds) that plants utilize to grow in a hydroponic unit. **So, statement 1 is not correct.**
- The systems are **usually fresh-water based**, but **salt-water systems are used** for some high-value fish or crustacean production. **Corrosive effects** of saltwater can greatly increase the **establishment, maintenance and depreciation costs** of the production system. **So, statement 2 is correct.**
- **Aquaponics shares many of the advantages that hydroponics** has over conventional crop
    - production methods including:
    - reduced land area requirements
    - reduced water consumption
    - **accelerated plant growth rates**
    - year-round production in controlled environment. **So, statement 3 is correct.**

Therefore, option (b) is the correct answer.

Relevance: The Sikkim government is set to inaugurate modern technology of hydroponics, aquaponics, and rooftop farming.

28. Correct Answer A

Explanation :

- The Ministry of Environment and Forests in 2004, in **pursuance of the order of the Supreme Court of India,** constituted the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) for the **purpose of management of funds collected from the user agencies** for utilizing forest land for non-forest purposes under the **Forest (Conservation) Act, 1980.**
- **The compensatory afforestation fund Act 2016 provided for the following:**
    - It created permanent CAMPA authority for national and state levels (the **earlier created CAMPA was ad hoc**). **So, statement 1 is correct.**
    - It also created separate National and state compensatory afforestation funds. The **State Funds will receive 90% of all the collected funds**, and the National Fund will receive the remaining **10%. So, statement 2 is not correct.**

Therefore, option (a) is the correct answer.

29. Correct Answer C

Explanation :

A typical lake can be **divided into various zones** depending on the depth, light penetration and other factors. The different zones in a typical lake are:

- **The littoral zone:** It is the **nearshore area where sunlight penetrates** all the way to the sediment and allows aquatic plants (macrophytes) to grow. Both non-rooted phytoplanktons and rooted plants can grow in this area.
- **The limnetic zone:** It is the **open water area where light does not penetrate to the bottom.** Vegetation of this area generally consists of phytoplanktons.
- **The profundal zone:** The **deepest part of the open water without sunlight penetration** forms the profundal zone. It is generally found only in extremely deep lakes. The profundal region of the open water zone has no green plants as it is dark and so cannot support photosynthesis.
- **Benthic Zone:** This forms the **floor of the lake** and underlies the littoral and limnetic zone. It is generally **covered by fine layers of sediments** in which animals live.

Therefore, option (c) is the answer.

30. Correct Answer B

Explanation :

- Invertebrate is any animal that **lacks a vertebral column, or backbone**, in contrast to the cartilaginous or bony vertebrates. **Porifera, Cnidaria, Annelida, Mollusca Arthropoda** are some of the important phyla. Worldwide in distribution, they include animals as diverse as **sea stars, sea urchins, earthworms, sponges, jellyfish, lobsters, crabs, insects, spiders, snails, clams, and squid. So, points 2, 3 and 4 are correct.**
- **Vertebrates:** They **have a backbone** inside their body. **Fish, reptiles, birds, amphibians and mammals** are different sub-groups of vertebrates, they all have internal skeletons and backbones. **Sea horse** is classified as a vertebrate. **So, point 1 is not correct.**

Therefore, option (b) is the correct answer.