

**Q: Consider the following:**

1. Pharmaceuticals
2. Environmental Science
3. Cosmetic

Foldscope can be used in which among of the above following?

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: a

Explanation:

- The Foldscope is a handheld microscope made mostly of paper that can be connected to a smartphone camera.
- The researchers found that foldscopes could capture the roundness and aspect ratio of an object to within 5% of those captured by state-of-the-art instruments called scanning electron microscopes (SEM), which cost more than ₹50 lakh each.
- The foldscopes can be used in pharmaceuticals (to inspect drug products), environmental science (pollutants), and cosmetics (powders and emulsions), among other areas.

**Q: Consider the following statement:**

1. India's soil classification scheme include grain shape because measuring it accurately is easy.
2. The foldscopes can be used to study "soil particles' morphology.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: b

Explanation:

- The foldscopes can be used to study "soil particles' morphology", which can "help understand soil structure, nutrient availability, and plant growth" in agriculture. Their focus was on the shape of soil grains.
- India's soil classification scheme doesn't include grain shape because measuring it accurately is "complex" and due to "the limited availability of affordable image capturing instruments". The scheme classifies soil based on size, consistency, and susceptibility to deformation.

**Q: Consider the following statement regarding Index Fund:**

1. It is a source of investment for investors looking at a long term, less risky form of investment.
2. Vanguard Group founder John Bogle first launched it.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: c

Explanation:

- In 1976, American fund industry veteran and Vanguard Group founder John Bogle sought to address this by launching the world's first index fund.
- Index Funds today are a source of investment for investors looking at a long term, less risky form of investment. The success of index funds depends on their low volatility and therefore the choice of the index.

**Q: Consider the following statement regarding Seahorse:**

1. The coastal ecosystems of India house nine out of 12 species found in the Indo-Pacific.
2. Nine species are distributed along the coasts of eight States and five Union Territories.
3. The population of the great seahorse, which is among the eight species tagged 'vulnerable' is declining.

Choose the correct option from the codes given below:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: d

Explanation:

- There are 46 species of seahorses reported worldwide. The coastal ecosystems of India house nine out of 12 species found in the Indo-Pacific, one of the hotspots of seahorse populations that are distributed across diverse ecosystems such as seagrass, mangroves, macroalgal beds, and coral reefs.
- These nine species are distributed along the coasts of eight States and five Union Territories from Gujarat to Odisha, apart from Lakshadweep and the Andaman and Nicobar Islands.
- The population of the great seahorse, which is among the eight species tagged 'vulnerable', is declining due to its overexploitation for traditional Chinese medicines and as an ornamental fish, combined with general destructive fishing and fisheries bycatch.

**Q: Recently world's first 200-meter-long Bamboo Crash Barrier was installed in Vidarbh, Maharashtra.**

**Consider the following statement:**

1. The bamboo species used in the making of this barrier is Bambusa Balcoa.
2. It has been treated with creosote oil and coated with recycled High-Density Poly Ethylene (HDPE).
3. The recycling value of the bamboo barrier is less than steel.

Choose the correct option from the codes given below:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: a

Explanation:

- Recently, an extraordinary accomplishment towards achieving Aatmanirbhar Bharat has been made with the development of the world's first 200-meter-long Bamboo Crash Barrier which has been installed on the Vani-Warora Highway, Vidarbh, Maharashtra.
- The recycling value of the bamboo barrier is 50-70% whereas that of steel barriers is 30-50%.
- The bamboo species used in the making of this barrier is Bambusa Balcoa, which has been treated with creosote oil and coated with recycled High-Density Poly Ethylene (HDPE).