

Corrigendum/Explanation SFG 2026 Level 1 Test 40

There is 1 change in today's paper (Q.11). In Q.11, the correct answer is Option (a).

In Q.11) the correct answer is option (a).

There was a doubt raised regarding the Option 2 and 3 of the question.

Explanation: As per the official answer key of UPSC CSE Pre 2024, option 2 and 3 are incorrect regarding the use of hydrogels in 2. Mobile air-conditioning systems and 3. Preparation of Industrial lubricants as the research evidence are inconclusive and these are considered the potential applications.

For Future Reference:

Q.11) In which of the following are hydrogels used?

1. Controlled drug delivery in patients
2. Mobile air-conditioning systems
3. Preparation of Industrial lubricants

Select the correct answer using the code given below:

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

Ans) a

Exp) Option a is the correct answer.

Hydrogels are water-absorbent, crosslinked polymer networks that can hold large amounts of water. They are used in medical applications, such as wound dressings, drug delivery systems, and tissue engineering. Hydrogels' biocompatibility, flexibility, and responsiveness to environmental changes make them valuable in biotechnology and soft robotics.

Option 1 is correct: Hydrogels are widely used in controlled drug delivery systems because they can encapsulate drugs and release them in a controlled manner over time. This application leverages the hydrophilic nature and biocompatibility of hydrogels.

Option 2 is incorrect: Hydrogels potential are being explored in mobile air-conditioning systems, particularly in evaporative cooling applications. Thus in future they can be used in mobile air-conditioning systems but presently they are not used in mobile air conditioning systems.

Option 3 is incorrect: Similarly, hydrogels can be used in industrial lubricants to improve their properties, such as reducing friction and wear, controlling viscosity, and improving thermal stability. Their potential is being explored but it would be incorrect to say that they are presently being used.

Source: UPSC CSE Pre 2024

Subject:) Science and Technology

Topic:) Applied Science: Robotics and Other Modern Technologies

Subtopic:)