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Q82

With reference to agricultural soils, consider the following statements: 1. A high content of organic matter in soil drastically reduces its water holding capacity. 2. Soil does not play any role in the sulphur cycle. 3. Irrigation over a period of time can contribute to the salinization of some agricultural lands. Which of the statements given above is/are correct? (a) 1 and 2 only (b) 3 only (c) 1 and 3 only (d) 1, 2 and 3 Official key: B.

UPSC Civil Services Prelims 2018 · General Studies · 2 marks · Environment and Ecology

Environment, ecology, climate, biodiversity - Prelims GS Paper I.

Explanation**(a)**

(a) 1 and 2 only. Organic matter increases, rather than drastically reduces, water-holding capacity, so statement 1 is false. Soils are active in the **sulphur cycle** (organic S, sulphate, microbes), so statement 2 is false. This option is not the key.

(b) Official key

(b) 3 only. Prolonged irrigation in arid and semi-arid tracts brings dissolved salts that accumulate when evapotranspiration exceeds leaching-**secondary salinisation**. That is statement 3, and it is the only correct statement. This option is the official key.

(c)

(c) 1 and 3 only. Statement 3 is true, but statement 1 reverses the role of **humus**. This option is not the key.

(d)

(d) 1, 2 and 3. Two of the three statements are false. This option is not the key.

Summary

Official key is (b) 3 only. **Humus** raises a soil's water-holding capacity, so statement 1 is backwards. Sulphur cycles through soil organic matter and sulphate ions, so statement 2 is false. Irrigation without adequate drainage does salinise land over time, which is statement 3. Only that statement survives. The WRAP key is (b).

Related possible facts

These can be asked in a future Prelims paper.

Humus

Raises porosity and available water in soil

Secondary salinisation

Salts from irrigation water plus capillary rise

Sulphur cycle

Soil microbes oxidise/reduce S; gypsum as a CaSO_4 amendment

ESP / sodicity

Exchangeable sodium percentage; related degradation

CSSRI Karnal

ICAR institute on saline and alkali soils

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