2022 : Soils of India, are clear reflection of structure and process. Comment

and

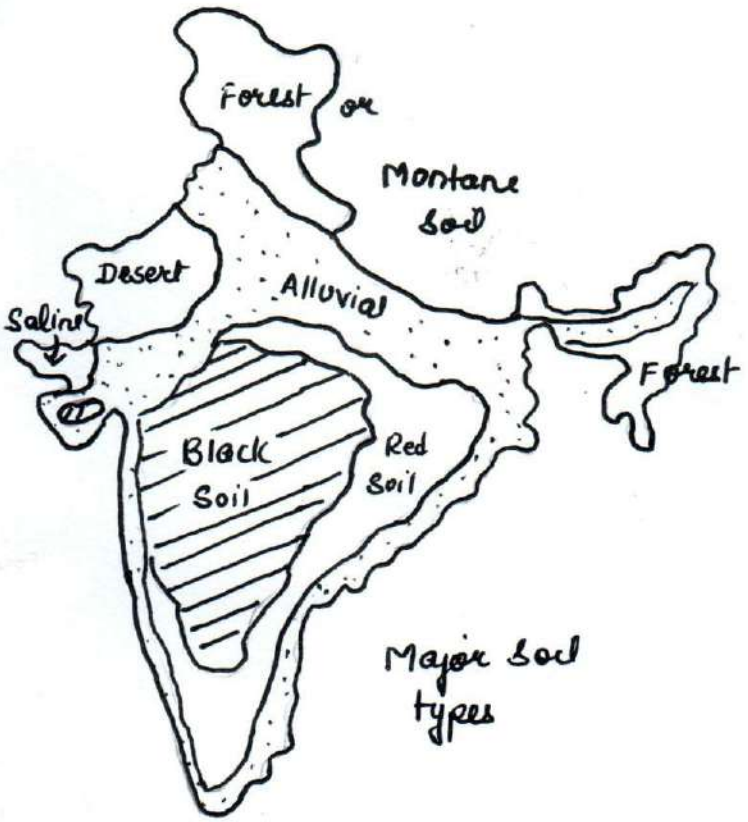
2020 : Soil types in India, classified on the basis of color, process, possess specific mineral and chemical characteristics. Discuss.

Frame In both these PYQs on Indian soil defining soil, identifying its types and characteristics are required

It is because — structure & process (2022) do determine color, mineral and chemical compn (2020)

Answer

- Top most layer of lithosphere, i.e., dynamic and complex mixture of minerals and humus is called soil.
- The major factors affecting formation of soil are relief, structure, climate, vegetation, other life forms and time
- ICAR - thus takes into consideration genesis colour, composition and location to classify 8 different soil types in India —



Soil forming regimes - when applied to insitu soil - peninsular soil of India - have generated two principal structural soils - Black soil
- Red soil

Black Soil - structurally developed over basaltic tableland (lava Plateau) is soil of clayey texture. These are rich in lime, iron but are poor in potash, nitrogen and humus. Essentially categorised as dark and medium black these covers Maharashtra Malnad and Kathiawar plateau regions.

Red Soil - structurally developed over Archean base thus have high concentration of iron oxides. More sandy in texture, poor in phosphorous, nitrogen and lime makes it infertile. Standing vegetation creates Red-brown and Red Yellow variants

* Laterite soil are process induced red soil variants subjected to percolational translocation, thus is acidic infertile soil. These are patchy in their presence in peninsular plateau.

It is with physiographic unit called Plains of India that process dominant - gradational soil - alluvial soil is found. Being mixture of variable grade of sand and clay - these are categorised as - flood plain and delta soils.

Annually renewed - Khader is distinguished from old alluvium - Bhager - is being more fertile

These soils are with moderate to low content of nitrogen, phosphorous and potash, moreover, as it spreads in variable rainfall regions - it involves multiple soil forming regimes thus variants

- leached acidic alluvial - Brahmaputra basin
- Saline alluvial (Kari) - deltaic plains
- alkaline alluvial (Reh/ Kallar) - bagar soil

* Montane / Forest soil essentially bears the imprint of climate, vegetation and relief. Alpine meadow Podzol, Podzolic with decreasing altitude justifies it. Relief forms the regulator of soil depth - scree / skeletal soil - with restricted fertility