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Prelims PYQ, Mains model answers, and copy evaluation. Write to the desk for this paper, a doubt, or the AI waitlist.

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Q15

What are the research and developmental achievements in applied biotechnology/? How will these achievements help to uplift the poorer sections of the society?

UPSC Civil Services Mains 2021 · GS III · 15 marks · Indian Economy

Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

Facts & figures for this PYQ only.

Numbers move. Confirm the latest Budget, Economic Survey or census round. This sheet is for revision, not a substitute for the model answer.

<https://wrapexams.com/upsc/mains-answers/gs-3/2021/what-are-the-research-and-developmental-achievements-in-applied-biotechnology-how-will-these-achievements-help-to-uplift-the-poorer-sections-of-the-society/>

Bt cotton

India's principal commercial GM crop; early bollworm control, later pink bollworm resistance in parts.

Vaccine manufacturing

Large WHO-prequalified capacity, including rotavirus and routine childhood antigens, plus COVID-era scale-up.

Marker-assisted selection

Molecular breeding used in public institutes to move drought, flood, and disease traits without always using transgenes.

Tissue culture

Mass clean planting material for banana and other crops used by small commercial growers.

DBT / ICAR / CSIR

Public biotech and agricultural research system that still supplies most poor-farmer varieties.

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