

WRAP Exams · wrapexams.com

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

ask@wrapexams.com · +91 85951 84903 · wrapexams.com

Q15

Why is there so much activity in the field of biotechnology in our country? How has this activity benefitted the field of biopharma? (250 Words, 15 Marks).

UPSC Civil Services Mains 2018 · GS III · 15 marks · Indian Economy

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

Core demand of the question

- Explain why biotechnology is so active in India
- Then show how that activity has helped biopharma, with gaps and recommendations

Revision summary

DBT, public labs, **BIRAC**, a large patient market, and generics plants explain India's biotech bustle.

Farm tools and contract research add demand besides hospitals.

Biopharma gained vaccines, **biosimilars**, recombinant insulin, and diagnostics, including UN-prequalified shots.

Gaps are original discovery, trial capital, and slow or split regulation.

Policy should keep cheap quality biologics and add a cleaner, faster regulatory clock.

Flow diagram

Disease farm market -> Biotech activity

DBT BIRAC CSIR -> Biotech activity

Generics GMP skill -> Biotech activity

Biotech activity -> Vaccines biosimilars insulin kits

Vaccines biosimilars insulin kits -> Lower cost public programmes

Faster quality regulation -> Vaccines biosimilars insulin kits

Conclusion

- One **predictable regulator clock** for clinical trials and biosimilar pathways, with world-class inspection rather than extra paper.
- Public purchase that rewards **quality and new antigens**, not only the lowest bid that kills R&D.
- **BIRAC**-scale funding for **translational** labs, cluster freeze-dry and fill-finish, and skill in bioprocess engineering.
- Open **biopharma to ethical data-sharing** for rare diseases while protecting privacy.

- **Keep access as the Indian edge:** cheap, good-enough biologics for the South, while a few centres chase original discovery.

Biotechnology is busy in India because public science, a huge health and farm market, and a generics culture met global contract demand. Biopharma gained vaccines, **biosimilars**, insulin, and diagnostics that cut cost and serve immunisation. The next gain is faster clean regulation and more original biologics, without losing the access model.

Facts & figures

DBT, 1986

Department of Biotechnology, the nodal Union department for the sector's public science and policy.

BIRAC

Biotechnology Industry Research Assistance Council, a public body that funds industry and start-up translation.

WHO-prequalified vaccines

Several Indian manufacturers supply UN procurement after World Health Organization quality listing.

Biosimilars

Follow-on biologic drugs that compete with originator monoclonals and other large molecules at lower price.

Bt cotton

The main commercial GM crop in India; it showed how fast a biotech trait can spread when farmers see a pest gain.

WRAP Exams · Write. Read. Analyse. Practice. · <https://wrapexams.com/upsc/mains-answers/gs-3/2018/why-is-there-s-o-much-activity-in-the-field-of-biotechnology-in-our-country-how-has-this-activity-benefitted-the-field-of-biopharma-250-words-15-marks/> · ask@wrapexams.com · wrapexams.com