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Q8(b)

Describe the role of Science and Technology in enabling us to face the challenges triggered by the COVID-19 pandemic.

UPSC Civil Services Mains 2021 · Sociology GS 1 · 15 marks · Social Change in Modern Society

Social Change in Modern Society: Sociological theories of social change; Development and dependency; Agents of social change; Education and social change; Science, technology and social change.

Core demand of the question

- How has science and technology shaped the COVID-19 experience? Discuss
- Keep the discussion within a 20-mark length

Revision summary

COVID-19 was organised by labs, states, and inequalities, not by gadgets alone.

Merton's science norms met **vaccine nationalism**.

Apps and WFH extended bureaucratic control; gig riders took exposure.

Digital divide and reverse migration split the experience.

Beck's risk and dependency of patents mark the politics of S&T.

Introduction

COVID-19 was a biological event organised by science, the state, and everyday inequality. Robert Merton's sociology of science, Ulrich Beck's **risk society**, and Michel Foucault's **biopolitics** are better guides than a hymn to gadgets. Technology saved lives and rationed them.

Body**Science as institution**

- Merton's **CUDOS** norms (communism of knowledge, universalism, disinterestedness, organised scepticism) were strained by **vaccine nationalism** and preprint noise.
- Laboratories, trials, and the WHO made a global fact. Dependency theory notes who owned patents and who waited.

Technology of control and care

- Testing, sequencing, oxygen plants, and mRNA and other vaccine platforms were productive forces in **Marx's** sense, suddenly politicised.
- Apps, lists, and work-from-home dashboards extended **Weber's** iron cage into the phone. Surveillance mixed with relief.
- Gig delivery and platform ratings kept urban middle-class consumption alive while riders faced exposure.

Unequal experience

- **Digital divide:** online school and telemedicine for some; informal workers without data, documents, or a **Census**-stable address.
- Reverse migration was a low-tech fact of walking bodies beside a high-tech media of infection curves.
- Gendered unpaid care absorbed hospital overflow at home.

Risk, trust, and the public

- **Beck's risk society:** manufactured uncertainty, expert disagreement, and blame.
- **Durkheim:** anomie when rules of gathering, work, and funeral broke; new rituals online.
- Civil controversy over lockdown science showed that "follow the science" is also a political sentence.

Democratisation question

- Inclusive development needs shared vaccines, open data, and occupational safety, not only a national app.
- Informal labour remained outside most techno-fixes.

Flow diagram

Science and technology -> Vaccines tests oxygen
 Science and technology -> Apps WFH surveillance
 Science and technology -> Patents digital divide
 COVID-19-19 -> Science and technology
 Reverse migrants -> Low-tech walk
 Salaried -> Apps WFH surveillance

Conclusion

Science and technology shaped COVID-19 as vaccines, files, apps, and WFH, and as patent and digital inequality. Merton, Beck, **Weber**, and Frank's hierarchy explain the split. The migrant walk and the laptop office were one pandemic, two technological worlds.

Facts & figures

CUDOS

Merton's institutional norms of science; strained when knowledge is fenced as property in a pandemic.

Risk society

Beck: modern hazards are produced by industry and science and debated by experts.

Biopolitics

Foucault: state power over life, health, and movement, visible in lockdown lists.

Vaccine nationalism

Core control of doses and IP while production and waiting followed global hierarchy.

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