Science & Technology · GS - III

The increasing threat of zoonotic diseases highlights the need for an integrated One Health framework in India. Examine the role of disease surveillance, biosecurity and inter-sectoral coordination in preventing outbreaks.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 14/11/2026	GS - III	Science & Technology

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Zoonotic diseases, avian influenza, One Health, animal-human interface, disease surveillance, veterinary infrastructure, poultry biosecurity, culling, inter-sectoral coordination, public health preparedness.

Model Answer

Introduction

Zoonotic diseases originate in animals and can spread to humans, creating significant public health and economic risks. Avian influenza outbreaks demonstrate the importance of coordinated disease prevention.

Key Challenges

- **Animal-human interface:** Intensive poultry farming and wildlife interactions can increase opportunities for pathogen transmission.
- **Surveillance gaps:** Delayed diagnosis and inadequate veterinary infrastructure can allow outbreaks to spread.

- **Economic consequences:** Culling, movement restrictions and market closures adversely affect poultry farmers and associated livelihoods.

Measures for Prevention

- **One Health approach:** Integrate human healthcare, veterinary services and environmental monitoring.
- **Early detection:** Strengthen laboratory networks, genomic surveillance and rapid reporting systems.
- **Farm biosecurity:** Improve sanitation, controlled movement, disinfection and safe disposal of infected birds.
- **Institutional coordination:** Strengthen cooperation among central and state agencies, local authorities and research institutions.

Conclusion

India needs a preventive, science-based One Health strategy combining early warning, veterinary capacity and community participation to minimise zoonotic risks.

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