Q6

What are the impediments in disposing the huge quantities of discarded solid wastes which are continuously being generated? How do we remove safely the toxic wastes that have been accumulating in our habitable environment? (150 Words, 10 Marks).

UPSC Civil Services Mains 2018 · GS III · 10 marks · Environment and Conservation

Conservation, environmental pollution and degradation, environmental impact assessment.

Core demand of the question

- List impediments in disposing huge daily solid waste
- Explain how toxic and hazardous wastes should be removed safely from inhabited areas
- Cite Solid Waste Management Rules 2016 and related hazardous-waste law

Revision summary

Disposal fails when wet and dry waste mix, landfills overflow, and municipalities pay for dumping not processing.

Plastic, e-waste and construction debris add volume that informal recycling cannot safely absorb.

SWM Rules 2016 require segregation, processing and sanitary landfills only for rejects.

Hazardous, biomedical and e-waste rules send toxins to TSDFs and licensed common facilities.

Safe clean-up of inhabited sites means leachate control, biomining of legacy dumps, and polluter-pays tracking.

Introduction

Indian cities and industrial belts now generate **solid waste faster than dumps can hold it: household wet and dry mix, plastic, construction debris, and toxic sludge** from factories and hospitals. Disposal fails when waste is mixed at the bin, when landfills leak, and when hazardous fractions sit in the open. Safe removal is a **chain**: segregate, treat, lock the residue, and track the toxin - not a single truck to the city edge.

Body

Impediments in disposing huge solid waste

- **No segregation at source** mixes food, plastic, sanitary waste and batteries, so composting, recycling and incineration all fail or become unsafe.
- **Municipal capacity is thin:** irregular collection, few **material recovery facilities**, and contracts that pay for tonnage dumped, not for processing.
- **Landfill sites** are full, poorly lined, and politically hard to site (NIMBY); leachate and methane then poison water and air.

• The **informal ragpicker** system recovers value but without safety gear, so recycling is real while health and data are not.

• Plastic, multilayer packaging and **e-waste** have low scrap value and high volume; **extended producer responsibility** is still uneven on the ground.

• Construction and demolition waste and **legacy dumps** add bulk that household systems were never designed to swallow.

• Public habit, weak user charges, and overlapping urban bodies slow **Swachh Bharat** processing targets even where rules exist.

Safe removal of toxic wastes

• **Solid Waste Management Rules, 2016** require source segregation, user fees, processing (compost, biomethanation, waste-to-energy with standards), and sanitary landfills only for rejects and inerts.

• **Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016** demand authorisation, manifests, and disposal only in **Treatment, Storage and Disposal Facilities (TSDFs)** - secured landfills and incinerators with emission control - not in municipal dumps.

• **Bio-medical Waste Management Rules, 2016** and **E-Waste (Management) Rules, 2016** send infectious and electronic toxins to licensed common facilities, not to the nala.

• **Immediate steps in inhabited areas: stop mixed dumping**, fence and cap leaking sites, pump and treat **leachate**, and relocate drummed chemicals to TSDFs.

• **Bioremediation and biomining** of legacy dumps can reduce volume if fractions are actually separated, not only turned.

• **Central Pollution Control Board** guidelines, State Pollution Control Board consent, and **Basel Convention** controls on transboundary hazardous movement close the legal loop.

• Community right to know, groundwater monitoring, and **polluter-pays** charges on industry keep toxins from returning to the basti after a one-time clean-up.

Flow diagram

Mixed huge waste -> Impediments no segregation full dumps

Mixed huge waste -> SWM Rules 2016 segregate process

Toxic fraction -> Hazardous Rules TSDF

Toxic fraction -> BMW and e-waste facilities

SWM Rules 2016 segregate process -> Sanitary reject only

Hazardous Rules TSDF -> Sanitary reject only

Conclusion

Huge solid waste sticks because it is mixed, under-funded and sent to dying dumps. Toxic fractions need licensed TSDFs, biomedical and e-waste channels, and lined residual landfills under the 2016 rules. Safe removal is segregation plus tracked treatment, not shifting the pile to another neighbourhood.

Facts & figures

SWM Rules 2016

Union solid waste rules: source segregation, processing, user charges, and sanitary landfill only for residual waste.

Hazardous Waste Rules 2016

Hazardous and Other Wastes (Management and Transboundary Movement) Rules: authorisation, manifests, TSDF disposal.

TSDF

Treatment, Storage and Disposal Facility: secured landfill and controlled incineration for hazardous industrial waste.

BMW Rules 2016

Bio-medical Waste Management Rules: colour-coded collection and common treatment facilities for hospital waste.

E-Waste Rules 2016

E-Waste (Management) Rules: extended producer responsibility and authorised recyclers for electronics.