CONTEXT:

For the last 5 years, major cities across India have recorded high PM10 levels on Deepavali day compared to those measured a week before the festival.

What is PM10?

# It is called the RSPM (Respiratory Suspended Particulate Matter).
# It is having a diameter of less than 10 micron. 1 micron is one millionth of a meter.
# It causes respiratory problems, skin diseases, asthma, fatigue, COPD, heart stroke.
# In India, the mean limit of PM10 is 100 microgram/meter cube.

Toxic Nature:

Conventional crackers contain chemicals which produce effects like bright lighting and colours. These chemicals have adverse effect on human health and environment

1. Charcoal, potassium nitrate and sulphur:
   # These are the primary fuel to crackers
   # Can be Carcinogenic

2. Strontium and Lithium
   # Red colouring agent
   # strontium replaces calcium in our body
   # lithium releases harmful fumes

3. Barium
   # Orange colouring agent
   # Respiratory and other health issues

4. Nitrates, chlorate
   # oxidizing agent
   # stunting in children
   # can be poisonous.

Supreme court steps:

Banned use of Barium nitrate.
Mandated to use green crackers

What is a green cracker?

# Traditional crackers have been made with Barium Nitrate, antimony and many other metals. These cause respiratory diseases and also cancer.
# CSIR and NEERI develops green crackers.
# Green Crackers are those fireworks without barium nitrate.
# Barium nitrate is substituted with Potassium nitrate and zeolite.
# the green versions of flower pot has a mixture of water and lime that is chemically stored in the crackers.
# NEERI has said that lab tests have proved 30% decrease in the PM emissions and also reductions in Sulphur dioxide and nitrous oxides.
# Green sparklers use potassium nitrate, aluminum nitrate, aluminum chips and proprietary additives to reduce PM10.
# SWAS(safe water releaser) is a new formulation for bomb.
# These crackers have the same sound level of the traditional crackers (100db)