

1. How can Global warming be seen as a cause of increase in epidemics? Discuss.**Demand of the question:**

It expects students to write about the relationship between global warming and increased epidemics all over the world.

Introduction:

Present pandemic of COVID-19 may be indirectly consequence of global warming, as it undermines environmental determinants of health, and places additional stress on health systems. More generally, most emerging infectious diseases, and almost all recent pandemics, originate in wildlife, and there is evidence that increasing human pressure on the natural environment may drive disease emergence.

Body:

Relation between climate change and Epidemic:

- **Rising Temperature:** Our bodies are amazing disease-fighting machines. One adaptation goes a long way: our warm body temperature can by itself shut down all sorts of unwanted invasions. When a pathogen enters our body, we often get a fever, warming us up even more to fight off disease. Fevers stimulate the immune system and, ideally, the heat creates an environment where it's difficult for pathogens to survive.
- **But, as pathogens are exposed to gradually warmer temperatures in the natural world, they become better equipped to survive the high temperature inside the human body. The pathogens that survive—and reproduce—are better adapted to higher temperatures, including those in our bodies. And, with that, one of our body's primary defense mechanisms diminishes in effectiveness.**
- **Like humans, bats are mammals that maintain a warm body temperature that protect them from disease. But while our body temperature rests around 98.6°F and spikes a few degrees when we're sick, bats' body temperatures can regularly jump to as high as 105°F. That means they can carry a whole slew of pathogens without suffering from them. In the near future, as global temperatures inch up, bats will continue to be protected by their body heat, while the pathogens they carry are better able to harm us.**
- **Extreme climate events:** The link between malaria and extreme climatic events has long been studied in India, for example. Early last century, the river-irrigated Punjab region experienced periodic malaria epidemics. Excessive monsoon rainfall and high humidity was identified early on as a major influence, enhancing mosquito breeding and survival. Recent analyses have shown that the malaria epidemic risk increases around five-fold in the year after an El Niño event.
- **Rising sea level:** Habitat loss due to climate is bringing animals that can transmit disease in contact with humans more often.

- Following table sourced from WHO-World Health Organisation shows global warming drivers as environmental changes, examples of diseases and pathways of effect.

Deforestation and new habitation	Malaria	▲ Breeding sites and vectors, immigration of susceptible people
	Oropouche	▲ contact, breeding of vectors
	Visceral leishmaniasis	▲ contact with sandfly vectors
Reforestation	Lyme disease	▲ tick hosts, outdoor exposure
Ocean warming	Red tide	▲ Toxic algal blooms
Elevated precipitation	Rift valley fever	▲ Pools for mosquito breeding
	Hantavirus pulmonary syndrome	▲ Rodent food, habitat, abundance

▲ increase ▼ reduction

Future epidemics and global warming:

- There is no evidence of a direct connection between climate change and the emergence or transmission of COVID-19 disease.
- However, there is uncertainty when Arctic permafrost melts what pathogens that have been buried for millennia will be released into the atmosphere and questions are being raised about human capacity to combat them.
- There are many unknowns about impact of shifting disease carrying mosquitoes outside tropics.
- Scientists are scrambling to find answers to these questions and many other known unknowns, but many unknown unknowns undoubtedly remain.

Conclusion:

For decades, scientists have recognized that climate change would lead to a range of public health consequences. Strengthening health systems, improved surveillance of infectious disease in wildlife, livestock and humans, and greater protection of biodiversity and the natural environment, should reduce the risks of future outbreaks of other new diseases.

2. Economic lockdown has miraculously changed the environment condition in India. What lessons can we learn from it and what measures should be taken to maintain this environmental condition?

Demand of the question:

It expects students to write about the impact of economic lockdown on the condition of environment in India. Students should also write about the lessons learnt and measures to maintain better environment.

Introduction:

Jalandhar, Punjab reported the visibility of the Himalayas which was a sight after a 30 years, and many pictures emerged of snow-capped mountains being seen in the

clear blue skies. Places all over the world like California, Beijing are experiencing clearer skies and canals in Venice, rivers like Ganga and Yamuna in India have all cleaned up.

Body:

Impact of Economic lockdown on Environment in India:

- Lower carbon emissions: As burning of fossil fuels and industrial activities come to halt; there is significant reduction in greenhouse gas emissions. Carbon output could fall by more than 5% this year - the first dip since a 1.4% reduction after the 2008 financial crisis.
- Air pollution control: In the capital, New Delhi, government data shows the average concentration of PM 2.5 plunged by 71% in the space of a week -- falling from 91 microgram per cubic meter on March 20, to 26 on March 27, after the lockdown began. The World Health Organization considers anything above 25 to be unsafe.
- The data from the Central Pollution Control Board (CPCB) was collated by the Centre for Research on Energy and Clean Air (CREA). Nitrogen dioxide went from 52 per cubic meter to 15 in the same period -- also a 71% fall. Mumbai, Chennai, Kolkata and Bangalore have also recorded a fall in these air pollutants.
- Cleaner water: One-tenth of the pollution in the Ganga river comes from industries. As industries are shut due to lockdown, the situation has become better. We have seen a 40-50 percent improvement in the Ganga. It is a significant development as per Professor at Chemical Engineering and Technology, IIT-BHU.
- Wildlife takeover: Dolphins spotted in Mumbai, whereas Malabar civet spotted on roads of Kozhikode.

Though, these changes are temporary but it has shown us the ray of hope to ask for the quality of environment even after the mitigation of pandemic.

Lessons learnt:

- One lockdown managed to do what 30 years of effort couldn't do to Ganga waters. While we have such plans, the implementation isn't serious; they're more for the obligation to the international guidelines according to environmentalists.
- Humans must have learnt that when we reduce our footprint, wildlife bounces back.
- Solar and wind energy plants today make more sense economically than mining for fossils.
- Economic development has been at the cost of environment. There's always been this approach of taking the easy way out as opposed to looking at industries that encompass the environment instead of believing that economic development has to come at the cost of the environment and then try to bargain with the cost.

- Like COVID-19, climate crisis affects society's most vulnerable and marginalized people and to address the climate crisis we need to focus on systemic and behavioural changes.

Measures for post-lockdown:

- Renewable energy: Government has been trying to incentivise the use of electric mobility vehicles, post lockdown it will be interesting to see if we invest money in the cleaner future.
- Green stimulus: The bailouts for companies, big or small, and relief for individuals ought to have green goals built into them. Polluting industries, especially those that release waste into rivers and groundwater, should be provided conditional bailouts if at all. The MSME (micro, small and medium enterprises) relief packages, for example, should differentiate between auto-ancillary units linked to the production of electric cars, including charging stations for them, and those linked to fossil fuel vehicles, favouring the former.
- Sustainable agriculture: Similarly, relief for agriculture can be designed to move farming away from depleting groundwater, and towards more sustainable practices and crop choices. Technical improvements for energy efficiency in irrigation include facilitating the upgrade to energy-efficient pump sets, and reduction of diesel consumption in irrigation can be incentivised.
- Righteous governance and approval can be major controllers of environmental hazards.

Conclusion:

Both the government and the people- the media, the judiciary, everyone has to come together and see this as an opportunity, it is mandatory that they come out as a strong force and this becomes a people's movement for change to happen. We can only use the COVID-19 outbreak as a lesson to mankind and once we pass the crisis, the government will need to focus on a coordinated and consistent action plan to tackle the climate crisis

3. Do you think sudden protests in America after the death of George Floyd are right? How can it affect the social condition in India?

Demand of the question:

It expects students to write about righteousness of protests in United States after the death of George Floyd. Students should also write about the impact of it on social condition in India.

Introduction:

George Floyd, a 46-year-old black man died in Minneapolis, Minnesota state of United States, after Derek Chauvin, a white police officer, knelt on Floyd's neck for almost nine minutes while Floyd was handcuffed face down in the street. Floyd had been arrested after being suspected of passing a counterfeit \$20 bill at a nearby market.

Body:

Protests in United States:

- Death of George Floyd brought back the memory of deep rooted discriminatory attitude of American state machinery towards Afro-American population.
- As a reaction of Floyd's death, initial peaceful protest converted into the attack on the symbols of white supremacists, transnational chain store which believed by protestors to be exploitative soon transformed into riot with violence, theft and loot.
- State is responsible to provide justice. But when there injustice from government itself, people has right to protest as per rich democratic tradition.
- However, there is difference of opinion on the form of protests. India's freedom struggle and Gandhian way has shown world way of peaceful protest. Many tend to differ on the use and efficiency of peaceful protest.
- Civil rights movement in American history led by leaders like Martin Luther king Jr. preferred nonviolent civil disobedience methods of Mahatma Gandhi to end legalised racial discrimination, disenfranchisement and racial segregation in United States.
- There is popular argument that response of masses against extraordinary injustices cannot be expected as measured. But, one injustice cannot be reason for committing another injustice. Burning and looting of property is like protesting injustice by doing another.
- There are also concerted efforts to discredit protests in the US as potential hotspots of COVID-19. Arguably people on the street believe racial violence as more dangerous than COVID-19 with which many may differ.

Impact on social condition in India:

- Racial discrimination in United States has shown that economic development not necessarily removes forms of discrimination in the society. That's why there in need of fresh thinking to bring social equality in India along with efforts of economic equality.
- Like United States, India has also many fault lines like religious discrimination, caste system, regionalism and linguistic issues; which often erupt into protests in India.
- However pattern of protest in India is mostly focussed on destroying public property. Loot of private property witnessed mainly during riot incidents in India. There may be possibility of threat to private property in the future Indian protests.

- Many people across the world expressed the solidarity with protesters including Indians tweeted with hash tag of 'black lives matter' and sporadic street protests outside American embassy in Kolkata. Idea of collective resistance is taking root in India as injustice anywhere is threat to justice everywhere.
- It has increased sensitivity among Indians that even one death should not be tolerated as victim of religious, caste, linguist, regionalist or ethnic hate.

In the past few days, many Americans on the right side of history have taken the knee to protest George Floyd's killing; reclaiming the very imagery of his death. That is the need of the hour: to take tools of oppression and turn them into resistance.

Conclusion:

The opportunity to build a better, more equitable India, lies in leveraging the numerous fluid identities of its people, resolving any discrepancies in group aspirations as they emerge on the way to achieving higher ideals. India has repeatedly shown world best way to protest to achieve desired objectives however struggle for equality and justice continues in different theatres of the world.

