

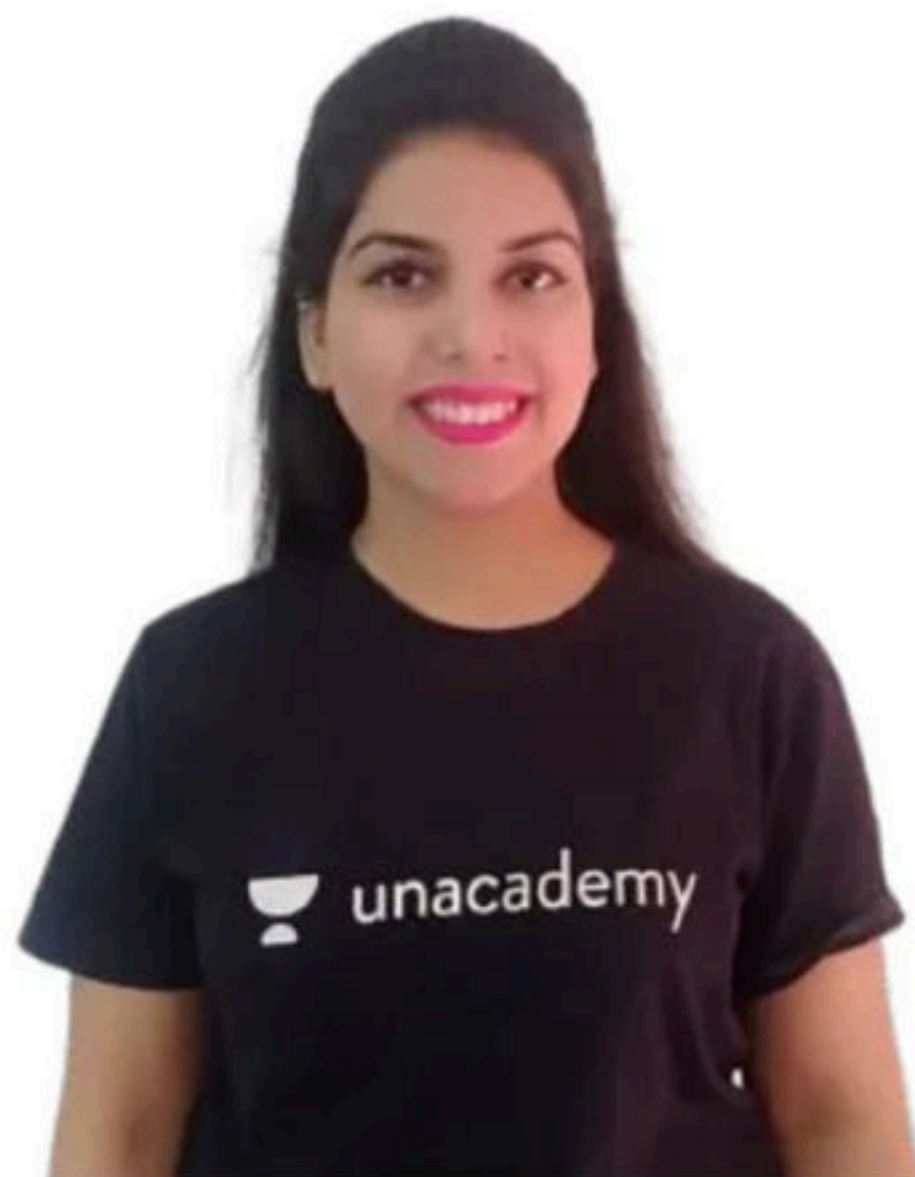
NTA UGC NET - Way to JRF 2021

Target: 100 Percentile AIR-1

MAHA Episode

Complete in 1 Class

People & Environment



JRF is Mine

इस बार JRF लेकर रहेंगे



Source	Total Installed Capacity (MW)	2022 target (MW)
Wind power	38,124.15	60,000
Solar power	36,050.74	100,000
Biomass power (Biomass & Gasification and Bagasse Cogeneration)	10,145.92	*10,000
Waste-to-Power	168.64	
Small hydropower	4,739.97	5,000
TOTAL	89,229.42	175,000

National Solar Mission: Target / Deliverables:

- Achieve 100 GW of solar power by 2022.
- Enabling policy framework for implementation of the mission
- Promoting 2000 MW of off-grid solar applications, including 20 million solar lights by 2022
- Creating a conducive environment for developing solar manufacturing capability in the country
- Supporting research and development and capacity building activities
- The target of 100 GW solar power is to be achieved in seven years starting from 2014-15, with 40 GW of grid-connected rooftop projects and 60 GW of large and medium land-based solar-power projects

National Mission for a Green India (GIM):

To increase forest/tree cover to the extent of 5 Mha and improve quality of forest/tree cover on another 5 Mha of forest/non-forest lands.

National Water Mission (NWM): Increasing water-use efficiency by 20%

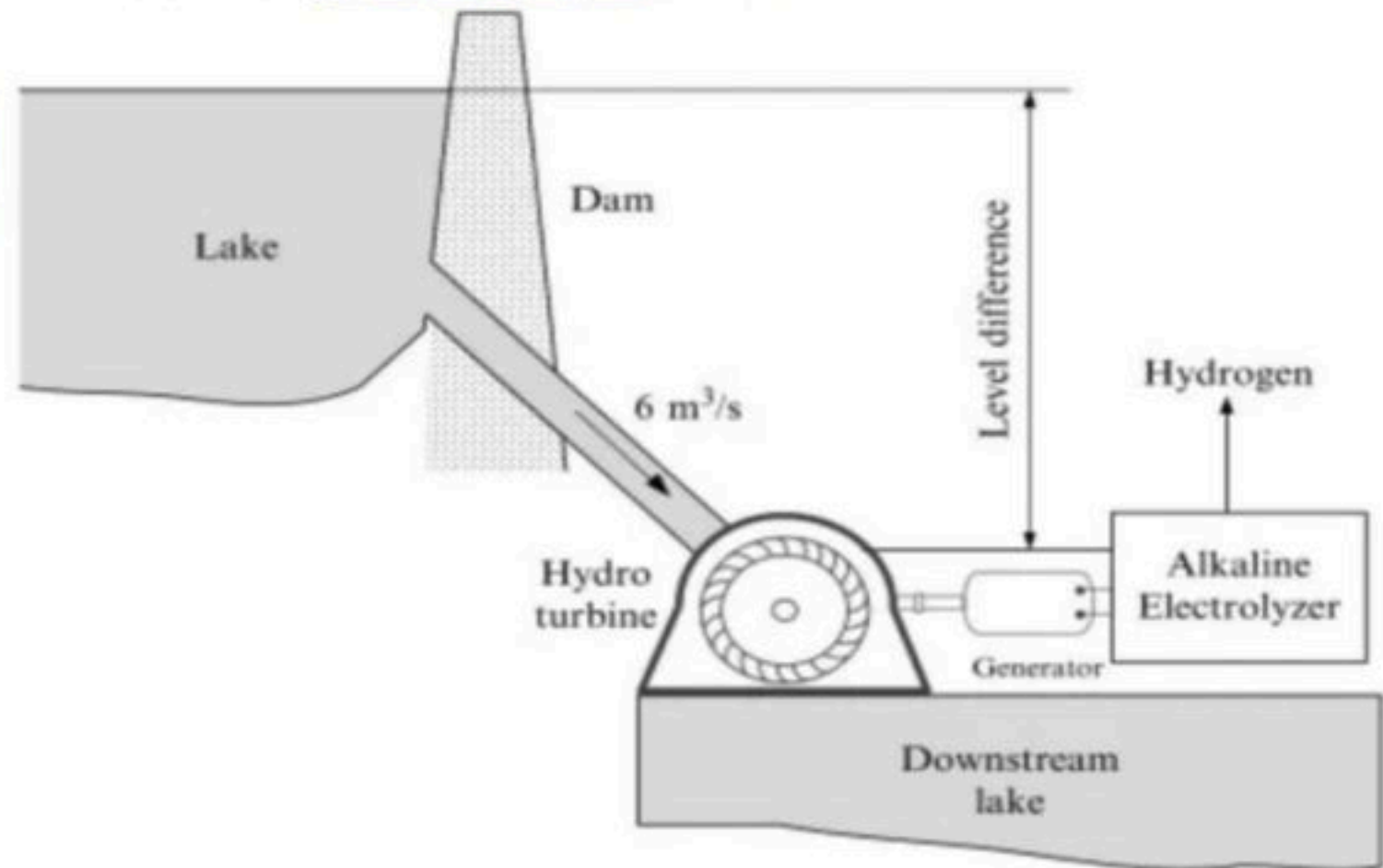
Hydropower plant categories

Micro	1 kW to 100 kW
Mini	100 kW to 1 MW
Small	1 MW to 10–30 MW
Large	Above 10–30 MW

Types of large-scale hydropower plants

- Conventional hydroelectric dams
- Pumped-storage
- Run-of-the-river
- Tidal

Hydropower plants can be **coupled with alkaline water electrolyzers** to generate green hydrogen. Depending on the head and the available volume rate, small- to large-capacity hydrogen generation plants of this kind can be installed. Hydroelectric power generation is an established technology that uses the potential energy of water to generate electricity.



The power generated by a hydropower plant in an ideal reversible process is given as follows:

$$W = V(0.5\rho v^2 + \rho g \Delta z + P)$$

ρv^2 = Photovoltaic energy

pressure is generated by gravity, then $P = \rho g \Delta z$, where

ρ is the density of the fluid,

g is the acceleration due to gravity, and

Δz is the difference between the fluid level at the two ends of the pipe.

The thermodynamic limit is never reached in practice because of friction in ducts and irreversibilities in the turbine.

Thus the efficiency of hydro energy conversion is commonly 80% with respect to water head $\rho g \Delta z$.

Small hydro may developed by constructing new facilities or through **re-development of existing dams** whose primary purpose is flood control, or irrigation. Old hydro sites may be re-developed, **Cost saving advantages can make the return on investment for a small hydro site well worth the use of existing sites.**

"small hydro" project is less than 50 megawatts (MW), and can be further subdivide by scale into "mini" (<1MW), "micro" (<100 kW), "pico" (<10 kW). In contrast many hydroelectric projects are of enormous size, such as the generating plant at the Three Gorges Dam at 22,500 megawatts or the vast multiple projects of the Tennessee Valley Authority.

India does not count large hydro power while accounting for renewable energy targets as it comes under the older Ministry of Power instead of Ministry of New and Renewable Energy.

The United Nations **Millennium Development Goals (2000- 2015)** are **eight goals** that all **191 UN member states** have agreed to try to achieve by the year **2015**. The United Nations Millennium Declaration, **signed in September 2000** commits world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. The MDGs are derived from this Declaration, and all have specific targets and indicators.

The Eight Millennium Development Goals are:

- | | |
|---|--------------|
| 1. to eradicate extreme p overty and h unger; | Pehla Hamara |
| 2. to achieve universal primary e ducation; | Engineer |
| 3. to promote g ender equality and empower women; | Govind |
| 4. to reduce c hild mortality; | Chaudhary |
| 5. to improve maternal h ealth; | ne Hamare |
| 6. to combat HIV/AIDS, malaria, and other d iseases; | Desh k |
| 7. to ensure e nvironmental sustainability; and | Equipment |
| 8. to develop a global p artnership for development. | Provide kiye |

Trick: Pehla Hamara, Engineer, Govind, Chaudhary, ne Hamare , Desh k, Equipment, Provide kiye

Targets of MDG in detail

Goal 1 : **Halve, between 1990 and 2015**, proportion of population below national poverty line

Goal 1 : **Halve, between 1990 and 2015**, proportion of people who suffer from hunger

Goal 2 : **Ensure that by 2015 children** everywhere, boys and girls alike, will be able to complete a **full course of primary education**

Goal 3 : **Eliminate gender disparity** in primary and secondary education, preferably by 2005, and in **all levels of education no later than 2015**

Goal 4 : **Reduce by two-thirds**, between 1990 and 2015, the **under-five mortality rate**

Goal 5 : Reduce by **three quarters (75%)**, between 1990 and 2015, the **maternal mortality ratio**

Goal 6 : Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Goal 6 : Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Goal 7 : Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Goal 7 : Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Goal 7 : By 2020, to have achieved, a significant improvement in the lives of at least 100 million slum dwellers

Goal 8 : In cooperation with the private sector, make available the benefits of new technologies, especially information and communication

विस्तार में एमडीजी के लक्ष्य

लक्ष्य 1: 1990 और 2015 के बीच, हल्वे, राष्ट्रीय गरीबी रेखा से नीचे की जनसंख्या का अनुपात

लक्ष्य १: १ ९९ ० से २०१५ के बीच, भूख से पीड़ित लोगों का अनुपात

लक्ष्य 2: सुनिश्चित करें कि 2015 तक हर जगह लड़के और लड़कियां एक जैसे हों, प्राथमिक शिक्षा का पूरा कोर्स कर सकेंगे

लक्ष्य 3: प्राथमिक और माध्यमिक शिक्षा में लैंगिक असमानता को कम करना, 2005 तक अधिमानतः, और शिक्षा के सभी स्तरों में 2015 के बाद नहीं

लक्ष्य ४: १ ९९ ० से २०१५ के बीच दो-तिहाई की दर से कम मृत्यु दर

लक्ष्य 5: 1990 और 2015 के बीच तीन चौथाई (75%) की कमी, मातृ मृत्यु अनुपात

लक्ष्य 6: 2015 तक रुका हुआ है और एचआईवी / एड्स के प्रसार को उलटने लगा है

लक्ष्य 6: 2015 तक रुका रहा और मलेरिया और अन्य बड़ी बीमारियों की घटनाओं को उलटने लगा

लक्ष्य 7: देश की नीतियों और कार्यक्रमों में सतत विकास के सिद्धांतों को एकीकृत करें और पर्यावरण संसाधनों के नुकसान को उलट दें

लक्ष्य of: हलवे, २०१५ तक, सुरक्षित पेयजल और बुनियादी स्वच्छता के लिए स्थायी पहुंच के बिना लोगों का अनुपात

लक्ष्य 7: 2020 तक, कम से कम 100 मिलियन झुग्गी निवासियों के जीवन में एक महत्वपूर्ण सुधार

लक्ष्य 8: निजी क्षेत्र के सहयोग से, नई तकनीकों, विशेष रूप से सूचना और संचार के लाभों को उपलब्ध कराना

1. **गरीब: End poverty**
2. **के पास खाना नहीं है: End hunger**
3. **Health खराब है: Ensure healthy lives**
4. **पढ़ने का मन नहीं करता : equitable quality education**
5. **भाई बहन में भेदभाव होता है: gender equality**
6. **पानी पीकर गुजारा करता है: availability and sustainable management of water and sanitation**
7. **तो energy आ जाती है: energy for all**
8. **काम करने का सोचा तो: employment and decent work for all**
9. **Industry लगा दी: sustainable industrialization and foster innovation**
10. **पैसे आ गए तो एक बार inequality दूर हो गई : Reduce inequality**
11. **Industry में sustainable environment बनाना है: cities and human settlements inclusive, safe, resilient and sustainable**
12. **सब ध्यान से consume करना है : sustainable consumption and production patterns**
13. **climate के लिए: urgent action to combat climate change**
14. **पानी के नीचे: sustainably use the oceans, seas and marine resources**
15. **धरती के ऊपर: terrestrial ecosystems, reverse land degradation**
16. **शांति लानी है: Promote peaceful and inclusive societies**
17. **सबके साथ मिलकर चलना होगा: global partnership**

- **Poor: End Poverty**
- **Have no food: end hunger**
- **Health is bad: ensure a healthy life**
- **Does not feel like reading: same quality education**
- **Siblings discriminate: gender equality**
- **Drinking and surviving water: Availability and sustainable management of water and sanitation**
- **So energy comes: energy for all**
- **Thought of working: Employment and decent work for all**
- **Industry Thought: Promoting sustainable industrialization and innovation**
- **Once the money comes, the inequality is overcome: reduce the inequality**
- **Creating sustainable environment in the industry: cities and human settlements inclusive, safe, resilient and sustainable**
- **Consumption is all carefully: sustainable consumption and production patterns**
- **For Climate: Immediate Action to Combat Climate Change**
- **Underwater: Consistently use oceans, seas and marine resources**
- **Above the Earth: terrestrial ecosystems, reverse land degradation**
- **Peace is to be brought: to promote a peaceful and inclusive society**
- **Gotta walk together: global partnership**

8 govt missions under National Action Plan on Climate Change (NAPCC) designed to heal India

Trick: SEHWAG is High Class player

1. National Solar Mission

This initiative started in 2010 to promote the use of solar power.

2. National Mission for Enhanced Energy Efficiency

The initiative was undertaken to promote the market for energy efficiency by fostering innovative policies and effective market instruments.

In 2009, it was approved 'in principle' by the PM's Council on Climate Change.

3. National Mission on Sustainable Habitat

Approved by the PM in 2011, it aims to make cities sustainable through improvements in energy efficiency in buildings, management of solid waste and shift to public transport.

The Ministry of Housing and Urban Affairs backs the mission.

4. National Water Mission in 2009 under the aegis of the Ministry of Water Resources

The mission was put in place to ensure integrated water resource management helping to conserve water, minimize wastage and ensure more equitable distribution both across and within states.

5. National Mission for a Green India

Also termed as the Green India Mission/Scheme, it aims at protecting; restoring and enhancing India's diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

Driven by the Ministry of Environment and Forests, it received the nod of approval from the Cabinet in 2014.

6. National Mission for Sustainable Agriculture

Another one of the govt's most efficient missions, it has been formulated for enhancing agricultural productivity especially in rain-fed areas focusing on integrated farming, water use efficiency, soil health management and synergizing resource conservation.

Recently got approval for one of its key missions -- National Bamboo Mission -- by the Cabinet.

7. National Mission for Sustaining the Himalayan Ecosystem

A multi-pronged, cross-cutting mission across various sectors, NMSHE got a nod from the Union Cabinet in 2014.

8. National Mission on Strategic Knowledge for Climate Change

The mission seeks to build a dynamic and vibrant knowledge system that informs and supports national policy and action for responding effectively to climate change challenges, while not compromising on the nation's growth goals.

Department of Science and Technology drives the mission, and a recent development under the mission was the govt's approval for establishing Karnataka's first climate change lab.

Primary Air Pollutants

Five major materials released directly into the atmosphere in unmodified forms.

- Carbon monoxide
- Sulfur dioxide
- Nitrogen oxides
- Hydrocarbons
- Particulate matter

Carbon Monoxide

- Produced by burning of organic material (coal, gas, wood, trash, etc.)
- Automobiles biggest source (80%)
- Cigarette smoke another major source
- Toxic because binds to hemoglobin, reduces oxygen in blood
- Not a persistent pollutant, combines with oxygen to form CO₂
- Most communities now meet EPA standards, but rush hour traffic can produce high CO levels

Sulphur Dioxide

- Produced by burning sulfur containing fossil fuels (coal, oil)
- Coal-burning power plants major source
- Reacts in atmosphere to produce acids
- One of the major components of acid rain
- When inhaled, can be very corrosive to lung tissue

London

-1306 banned burning of sea coal

-1952 “killer fog”: 4,000 people died in 4 weeks
tied to sulfur compounds in smog

Nitrogen Oxides

**Produced from burning of fossil fuels
Contributes to acid rain, smog
Automobile engine main source**

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Hydrocarbons

- Hydrocarbons - organic compounds with hydrogen, carbon
- From incomplete burning or evaporated from fuel supplies
- Major source is automobiles, but some from industry
- Contribute to smog
- Improvements in engine design have helped reduce



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Particulates

Particulates - small pieces of solid materials and liquid droplets (2.5 μm and 10 μm)

Examples: ash from fires, **asbestos from brakes** and insulation, dust

Easily noticed: e.g. smokestacks

Can accumulate in lungs and interfere with the ability of lungs to exchange gases.

Some particulates are known carcinogens

Those working in dusty conditions at highest risk (e.g., miners)

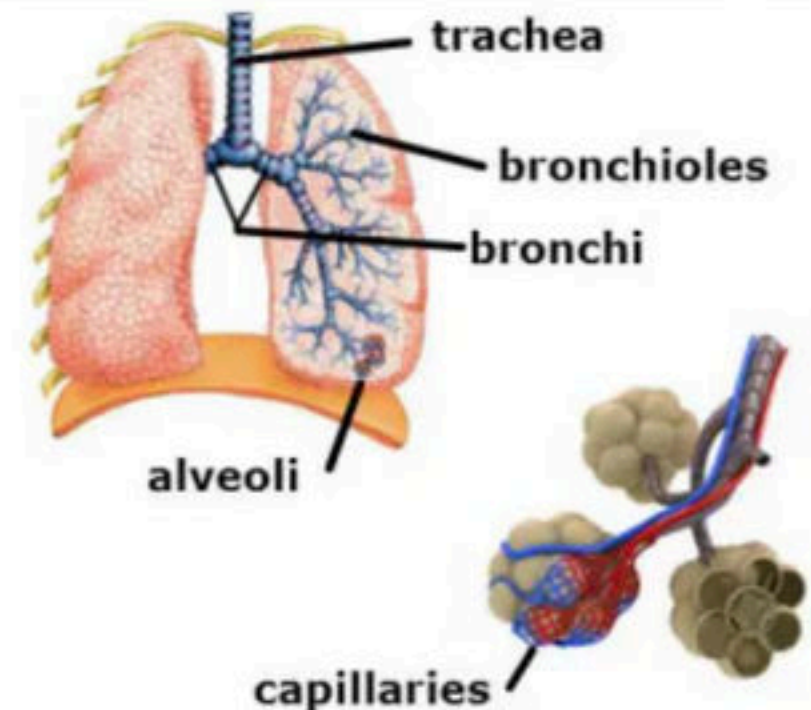


Respirable Suspended Particulate Matter (RSPM)

-PM1 having size $\leq 1\mu\text{m}$ (micrometer): effects in alveoli

-PM2.5 having size $\leq 2.5\mu\text{m}$: effects trachea

-PM10 having size $\leq 10\mu\text{m}$: effects in nasal part only



Secondary Pollutants

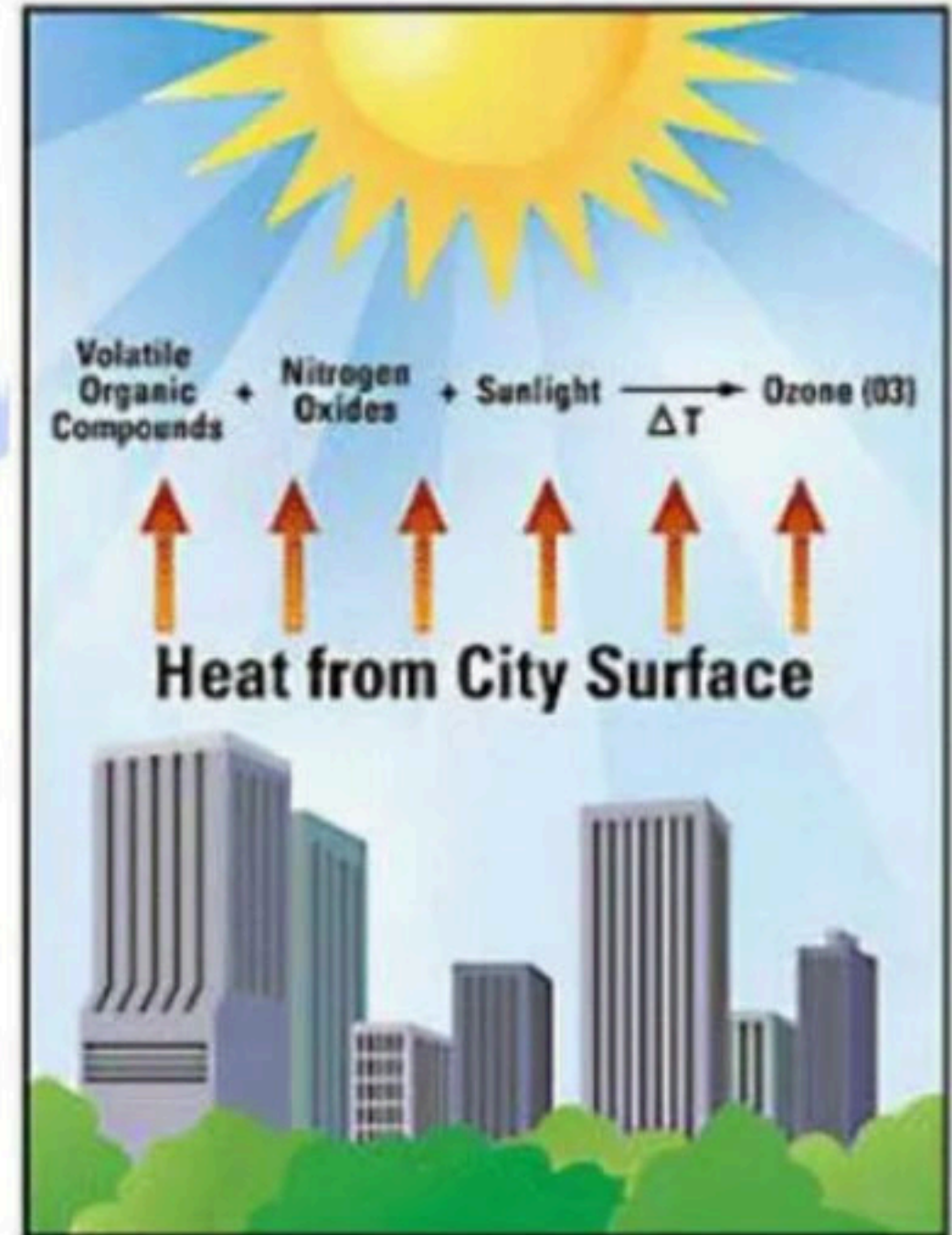
- Ozone
- PAN (peroxy acetyl nitrate)
- Photochemical smog
- Aerosols and mists (H_2SO_4)

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Ozone

Ozone (O₃) is a highly reactive gas composed of three oxygen atoms.

It is both a natural and a man-made product that occurs in the Earth's upper atmosphere (the stratosphere) and lower atmosphere (the troposphere).



Tropospheric ozone – what we breathe -- is formed primarily from photochemical reactions between two major classes of air pollutants, volatile organic compounds (VOC) and nitrogen oxides (NOX).

Volatile organic compounds, sometimes referred to as VOCs, are organic compounds that easily become vapors or gases. Along with carbon, they contain elements such as hydrogen, oxygen, fluorine, chlorine, bromine, sulfur or nitrogen.



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PAN

Smog is caused by the interaction of some hydrocarbons and oxidants under the influence of sunlight giving rise to dangerous peroxy acetyl nitrate (PAN).

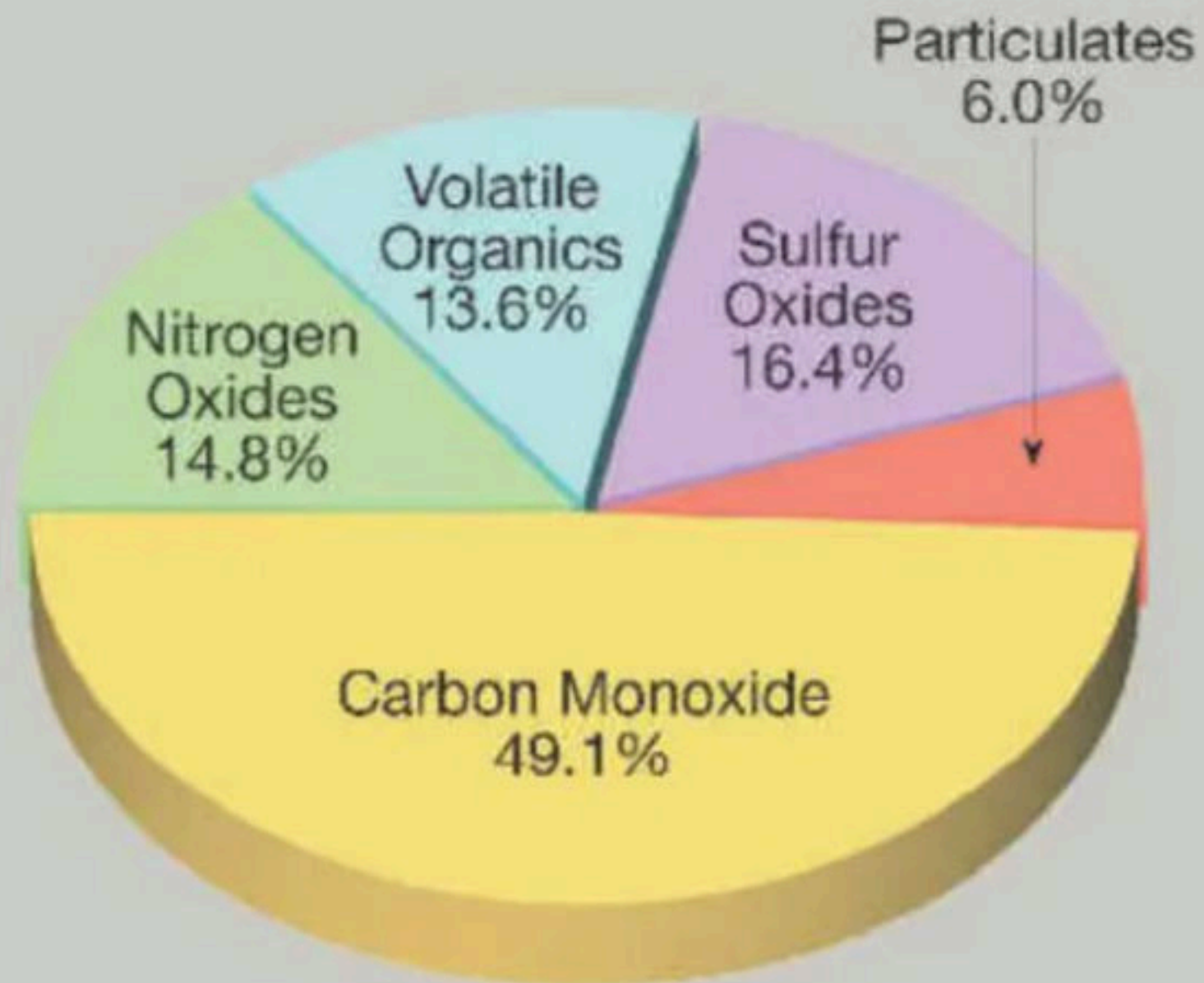
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Photochemical smog

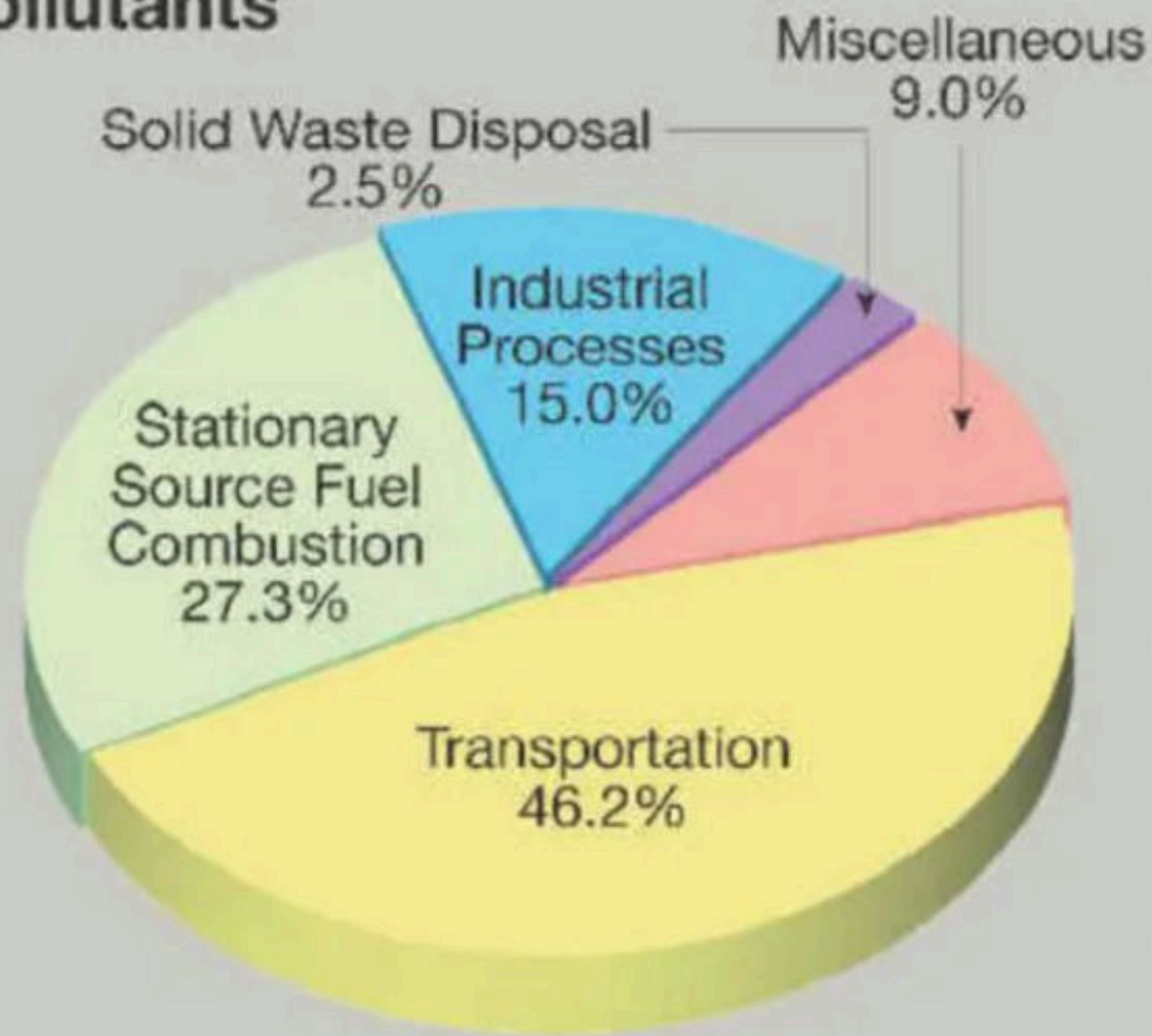
Photochemical smog is a mixture of pollutants which includes particulates, nitrogen oxides, ozone, aldehydes, peroxyethanoyl nitrate (PAN), unreacted hydrocarbons, etc. The smog often has a brown haze due to the presence of nitrogen dioxide. It causes painful eyes.

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Primary Pollutants



What They Are



Where They Come From

- Photochemical smog is also known as “**Los Angeles smog**”.
- Photochemical smog occurs most prominently in urban areas that have large numbers of automobiles (**Nitrogen oxides** are the primary emissions).
- Photochemical (**summer smog**) forms when pollutants such as **nitrogen oxides** (primary pollutant) and **organic compounds** (primary pollutants) react together in the presence of **SUNLIGHT**. A gas called **OZONE** (Secondary pollutant) is formed.

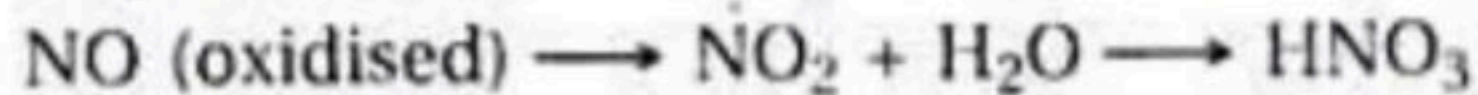
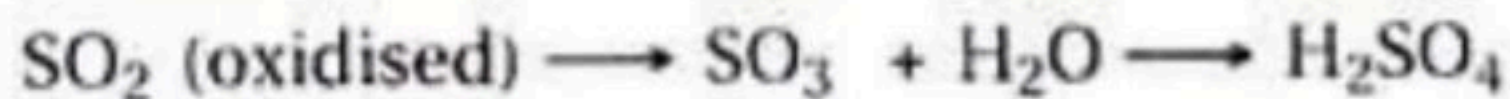
Nitrogen Dioxide + Sunlight + Hydrocarbons = Ozone (Ozone in stratosphere it is beneficial, but near the earth's surface it results in global warming as it is a greenhouse gas)

- Smog is a combination of airborne particulate matter, like soot, and invisible toxic gases including **ozone (O₃)**, **carbon monoxide (CO)**, **sulfur dioxide (SO₂)**, which are **carcinogens (cancer causing agents)**.

Fog is a condensed form of water vapour suspended in the atmosphere at or near the earth's surface.

Smog is harmful mixture of smoke and fog. It is formed by photochemical reaction of primary and secondary pollutants, such as hydrocarbons, NO_2 , PAN, HCHO etc. among which PAN is most harmful.

Acid rain is due to atmospheric pollutants such as oxides of sulphur and nitrogen. Oxides of sulphur are released from smoke stacks of coal fired power plants, smelters and other industries. Oxides of nitrogen come from fossil fuel combustion in automobiles and power plants. These oxides in air react with moisture to form H_2SO_4 and HNO_3 as given below :



Acid rain has pH as low as 4 or 4.5.

Sulfuric acid is a mineral acid with molecular formula H_2SO_4 . It is a colorless odorless syrupy liquid that is soluble in water, in a reaction that is highly exothermic.

Nitric acid, also known as aqua fortis and spirit of niter, is a highly corrosive mineral acid. The pure compound is colorless, but older samples tend to acquire a yellow cast due to decomposition into oxides of nitrogen and water.

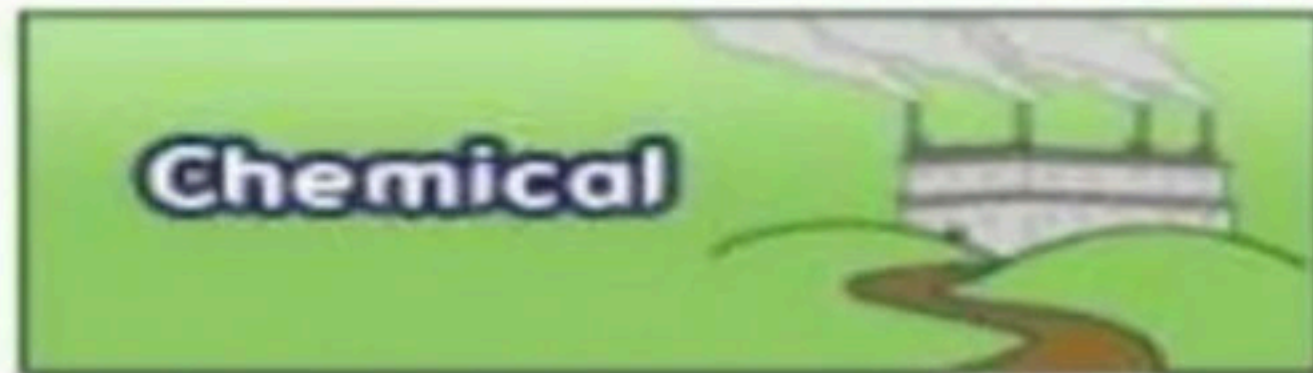
AQI

The National Air Quality Index (AQI) was launched in New Delhi on 17 September 2014 under the Swachh Bharat Abhiyan.

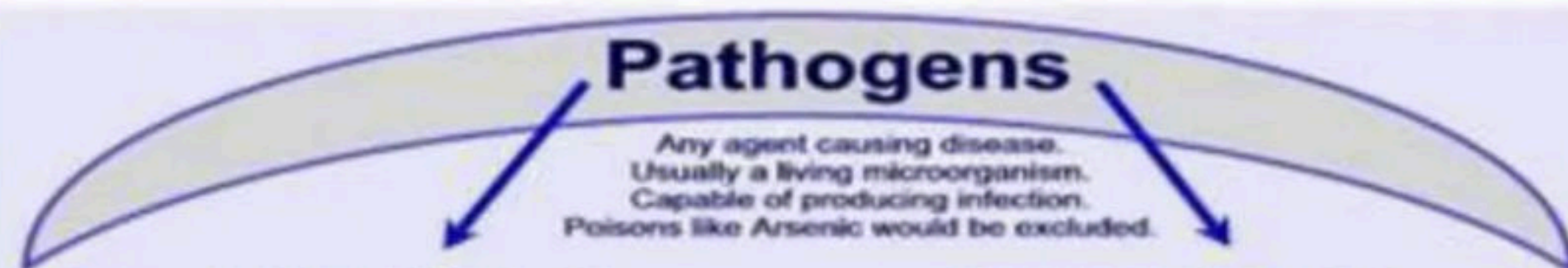
The Central Pollution Control Board along with State Pollution Control Boards has been operating National Air Monitoring Program (NAMP) covering 240 cities of the country having more than 342 monitoring stations

Under the US Clean Air Act of 1990, the NAAQS standards set maximum ambient concentration limits for six criteria pollutants including:

- | | |
|---|-----------------------|
| i. Ozone, O ₃ | |
| ii. Carbon monoxide, CO | |
| iii. Nitrogen dioxide, NO ₂ | |
| iv. Lead, Pb | |
| v. Oxides of sulfur, SO _x | |
| vi. Ammonia, NH ₃ | |
| vii. Particulate matter below 10 μm, PM ₁₀ | PM ₁₀ , |
| viii. PM _{2.5} | PM _{2.5} , |
| | NO ₂ , |
| | SO ₂ , |
| | CO, |
| | O ₃ , |
| | NH ₃ , and |
| | Pb |



- The **toxic chemicals** have the capability to **change the color of water, increase the amount of minerals**, also known as **Eutrophication**, change the temperature of water and pose serious hazard to water organisms.
- The **sewage water** carries **harmful bacteria and chemicals that can cause serious health problems**. Pathogens are known as a common water pollutant.
- The **sewers of cities house several pathogens and thereby diseases**. Microorganisms in water are known to be causes of some very deadly diseases and become the breeding grounds for other creatures that act like carriers.



VIRUSES

Multi-celled but can only reproduce inside a plant, animal, or person.

Hepatitis	SARS
Herpes, Mono	AIDS, HIV
Warts	Influenza
Chicken Pox	Cold Sores
Small Pox	Cold Germs
Bird Flu H5N1	Measles
Norovirus	Tetanus
Yellow Fever	Typhoid
Ebola Hemorrhagic Fever	

BACTERIA

Tiny one-celled creatures
Can live inside or outside the body.

Tuberculosis	Pneumonia
Anthrax	Urinary Tract Infection
Staph	Peritonitis
E. Coli	Strep Throat
Typhoid	Stomach Ulcers
Salmonella	Tularemia
Morgellons ?	Lyme Disease

FUNGI

Multi-celled but plant-like similar to tree fungus.
Takes nutrition from a plant, tree, or animal.

Ringworm	Yeast Infection
Adv Pneumonia	Histoplasmosis
Candidiasis	Cryptococcosis

PROTOZOA

One-celled creatures.
Usually spread through water.

Malaria	Giardiasis
Chagas Disease	Cryptosporidiosis

PARASITES

Actual complex living organism.
Can live in intestinal tract or blood stream.

Round Worm	Tape Worm
Morgellons ?	Trichinosis

PROTEIN

Multi-celled but can only reproduce inside a plant, animal, or person.

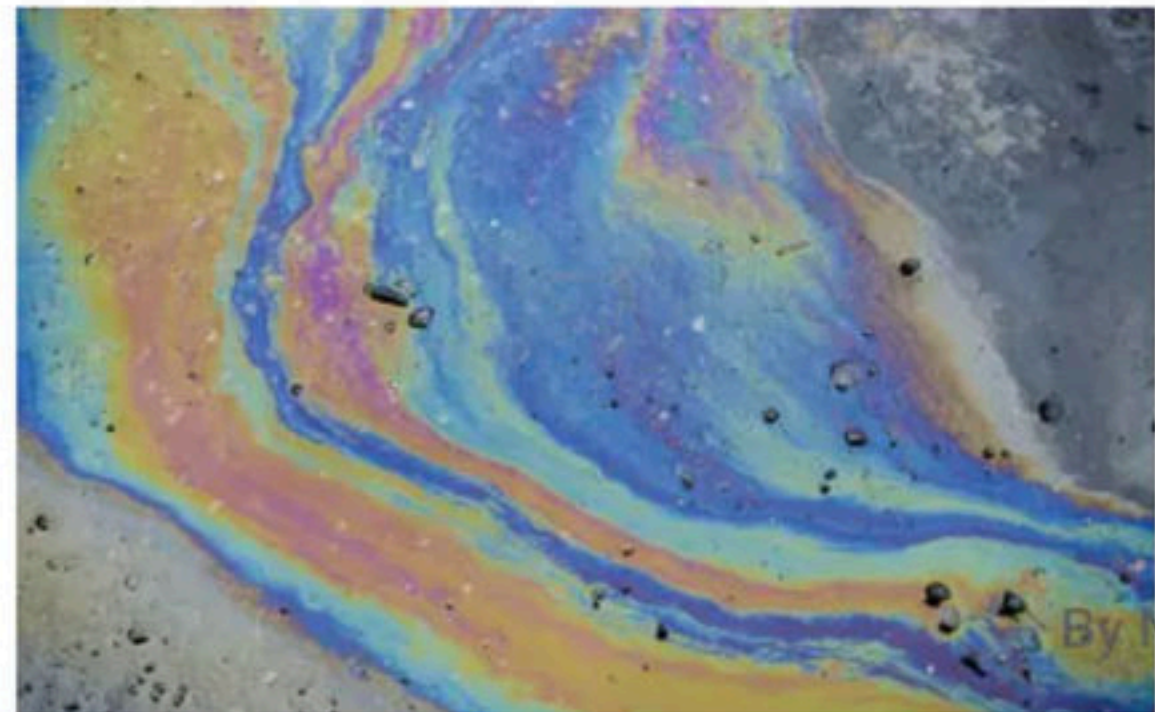
BSE Mad Cow Disease
vCJD Disease

1. Surface Water Pollution

Surface water pollution is the most **visible form of pollution** and we can **see it floating** on our waters in lakes, streams, and oceans.

Trash from human consumption, such as **water bottles, plastics and other waste products**, is most often evident on water surfaces.

This type of pollution also comes from **oil spills and gasoline waste**, which **float on the surface** and affect the water and its inhabitants. Water contaminants from fracking include a range of toxic chemicals, methane, benzene, and radiation.



5. Nutrient Pollution

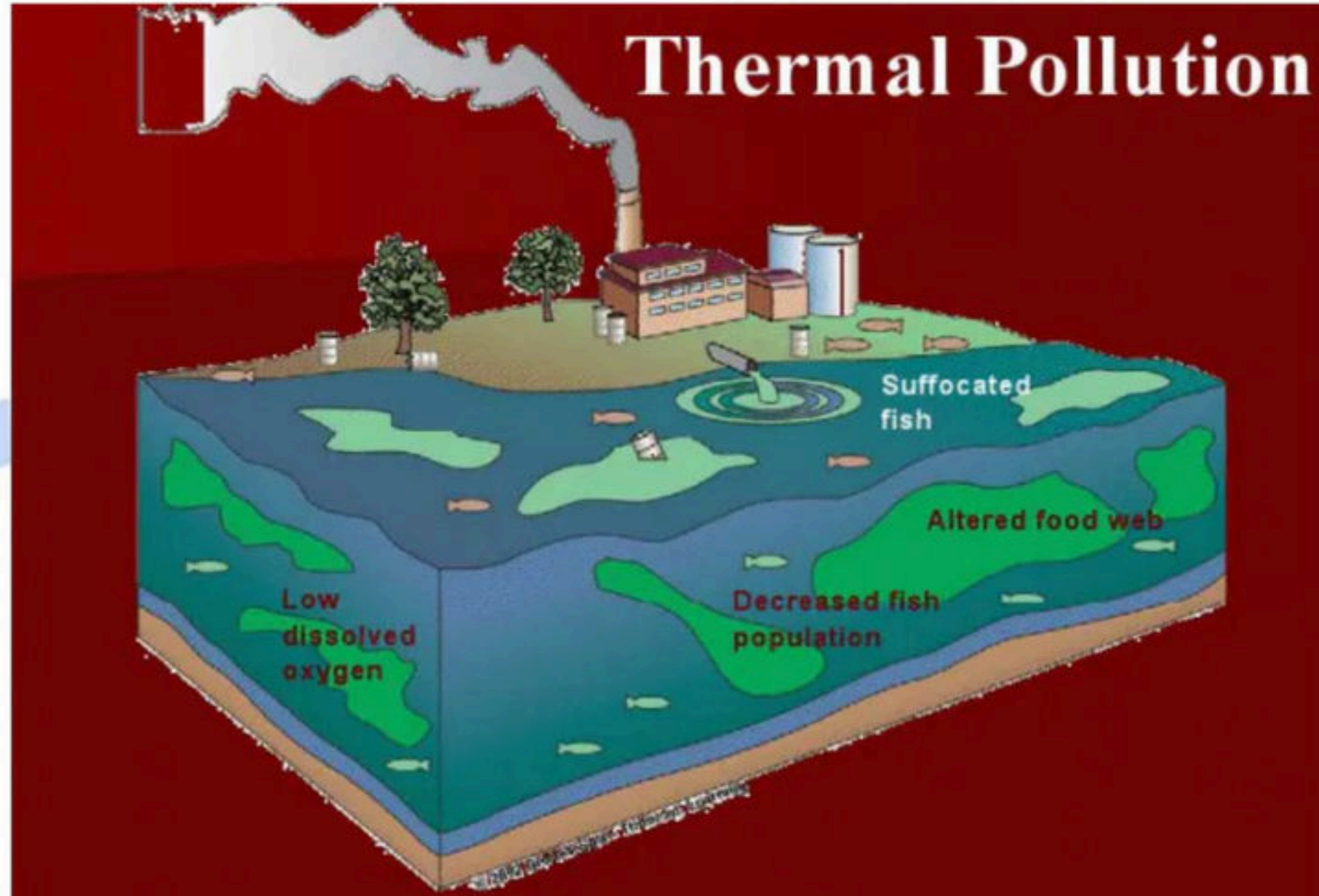
Nutrients are usually found in wastewater and fertilizers. These can cause excess vegetation in the water such as algae and weeds, using up the oxygen in the water and hurting the surrounding marine life and other organisms in the water.



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10 Thermal pollution

Thermal pollution is the rise or fall in the temperature of a natural body of water caused by human influence. Thermal pollution, unlike chemical pollution, results in a change in the physical properties of water.



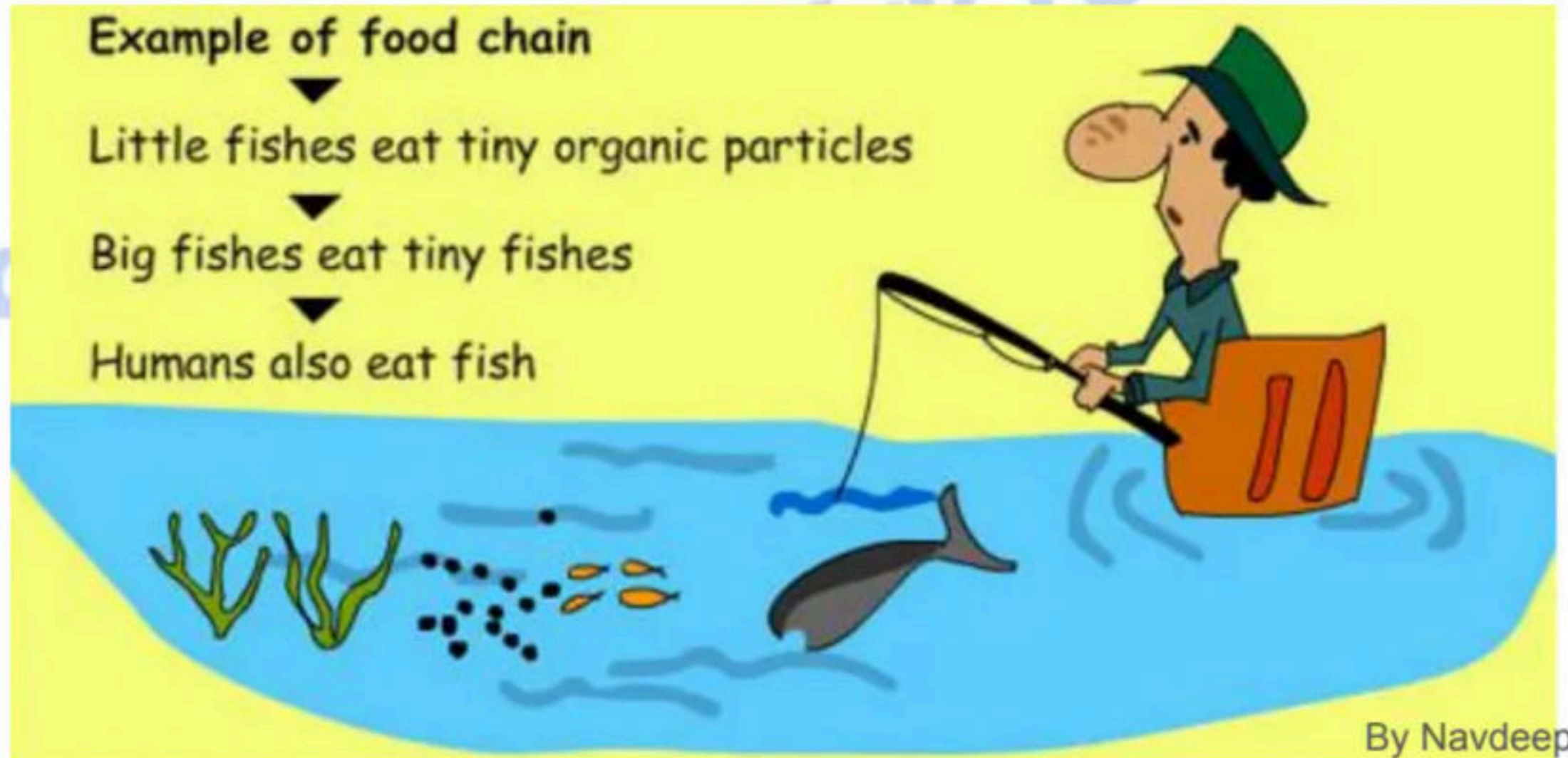
DISEASES CAUSED BY PATHOGENIC ORGANISMS IN CONTAMINATED WATER

The factors causing most harm to human health through contaminated water are pathogenic microbes. Based on these, diseases generated by contaminated water are divided into the following main categories:

- **By virus** – Jaundice (Yellow Fever), polio, gastroenteritis, common cold, infectious liver Sod, and smallpox.
- **By bacteria** – Diarrhoea, loose motions, paratyphoid, high fever, cholera, whooping cough, gonorrhoea, syphilis, gastroenteritis, dysentery, and tuberculosis.
- **By protozoa** – Pyorrhoea, dysentery, narcolepsy (epidemic encephalitis), malaria, amoebiasis, and giardiasis.

- **Disruption of food-chains**

Pollution disrupts the natural food chain as well. Pollutants such as lead and cadmium are eaten by tiny animals. Later, these animals are consumed by fish and shellfish, and the food chain continues to be disrupted at all higher levels.



Food and Drug Administration (FDA) warning Arsenic in brown Rice



Dangers of lead and arsenic poisoning

Arsenic poisoning

Nerve damage

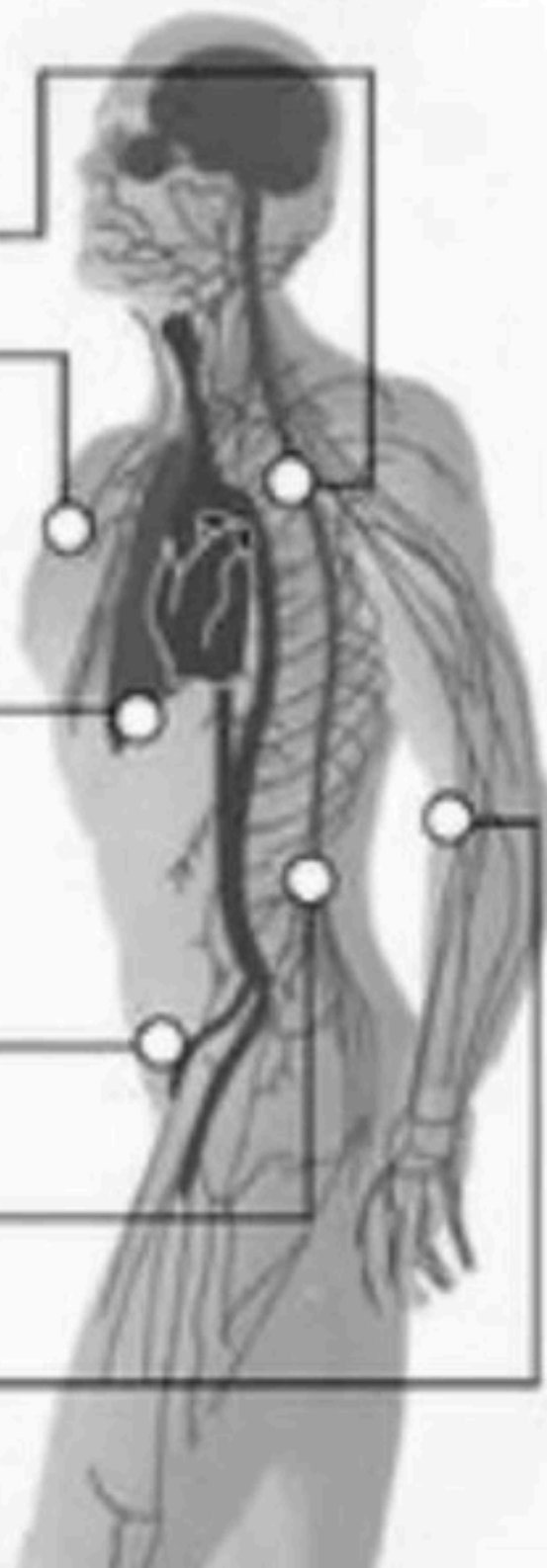
Skin damage:

- Hyperkeratosis (scaling skin)
- Pigment changes

Increased cancer risk:

- Lung
- Bladder
- Kidney and liver cancers

Circulatory problems in skin



Lead poisoning

High levels of lead

- Mental retardation, coma, convulsions and death

Low levels of lead

- Reduced IQ and attention span, impaired growth, reading and learning disabilities, hearing loss and a range of other health and behavioral effects.

Antarctic Ozone Hole

As winter arrives, a vortex of winds develops around the pole and isolates the polar stratosphere. When temperatures drop below -78°C (-109°F), thin clouds form of ice, nitric acid, and sulphuric acid mixtures. Chemical reactions on the surfaces of ice crystals in the clouds release active forms of CFCs. Ozone depletion begins, and the ozone "hole" appears.

Natural events such as Volcanic Eruptions can strongly influence the amount of Ozone in the atmosphere.

Sources: man-made chemicals such as CFCs are now known to have a very dramatic influence on Ozone levels too. CFCs were once widely used in aerosol propellants, refrigerants, foams, and industrial processes.



Ozone Depleting Substances (ODSs) and Use

1. **Chlorofluorocarbons (CFCs)**: Refrigerants, solvents, and foam blowing agents.
2. **Hydrochlorofluorocarbons (HCFCs)**: Used to replace CFCs. Still have ozone depleting properties, but much lower than CFCs.
3. **Methyl bromide (CH₃Br)**: Agricultural pesticide
4. **Carbon tetrachloride (CCl₄)**: Fire extinguishers, industrial solvent, agricultural fumigant, and industrial processing
5. **Methyl Chloroform (CH₃CCl₃)**: Industrial solvent
6. **Halons**: Fire extinguishers



Ozone
Secretariat



JRF

© Nav

The Montreal Protocol is preventing 2 million cases of skin cancer globally each year by 2030 and millions of cases of cataracts

INDIA'S COOLING ACTION PLAN

OBJECTIVES FOR 2037-38

20%-25%

Reduction of cooling demand across all sectors

Reduction of refrigerant demand

25%-30%

25%-40%

Reduction of cooling energy requirements

Training and certification of servicing sector technicians by 2022-23

100,000

The Centre on 18 August 2021 approved **India's ratification of the Kigali Amendment to the Montreal Protocol** on phasing down climate-damaging refrigerant Hydrofluorocarbons (HFCs). The Amendment to gradually reduce use of **HFCs by the late 2040s was adopted by 197 countries in Rwanda in October 2016**. Source TOI

Under its commitment to the Montreal Protocol, India will complete its phase down of HFCs, used in air-conditioners, refrigerators and insulating foams, in four steps from 2028 onwards with cumulative reduction of **10% in 2032, 20% in 2037, 30% in 2042 and 80% in 2047 over 2024-26 baseline**.

“National strategy for phase down of HFCs as per the applicable phase down schedule for India will be developed after required consultation with all the industry stakeholders by 2023,” said a Cabinet note on the decision.

Different countries have different phase down plans under the Protocol. The developed countries including the US, Canada, west European nations and Japan will reduce HFC use first, followed by China and then by 10 developing countries including India, Iran, Iraq and Pakistan. Overall, the action is expected to reduce HFC use by 85% by 2045 over different baselines by different countries.

The move on HFCs phase down by all member countries of the Protocol assumes significance at this juncture as the collective action is expected to **prevent the emission of up to 105 million tonne of carbon dioxide equivalent of greenhouse gases, helping to avoid up to 0.5 degree Celsius of global temperature rise by 2100**, while continuing to protect the ozone layer.

The Montreal Protocol on substances that deplete the Ozone layer, is an international environmental treaty for protection of the Ozone layer by phasing out the production and consumption of man-made chemicals referred to as ozone depleting substances (ODS). The stratospheric ozone layer protects humans and the overall environment from harmful levels of ultraviolet radiation from the sun. After gradually phasing down use of HFCs, the countries will use cleaner alternatives.

Cogan syndrome (also known as Cogan's syndrome) is an uncommon condition marked by recurrent **corneal inflammation**, as well as **fever, exhaustion, and weight loss, vertigo (dizziness), tinnitus (ringing in the ears), and hearing loss**. If left untreated, it might result in deafness or blindness. D. G. Cogan was the first to describe the classic form of the disease in 1945.

Keratitis is an inflammation of the cornea, which is the transparent, dome-shaped tissue that covers the pupil and iris in the front of the eye. An infection may or may not be linked to keratitis.

Medications

- Oral corticosteroids may be required to lessen the inflammatory response in more severe illness. Other immunosuppressive drugs are frequently indicated when high quantities of steroids are required or if the condition is severe and not responding to steroid therapy. Methotrexate, cyclophosphamide, cyclosporine, and azathioprine are examples of immunosuppressive medicines. Combinations of these medications may be administered in specific instances. Cochlear implantation may be used to restore some sense of hearing if the disease has destroyed blood vessels in the ear.
- Cinnarizine is primarily used to treat **motion sickness, vertigo, Ménière's illness, and Cogan syndrome**.
- It has been proven in studies to significantly improve hearing loss in some patients.

Source of Sound/Noise	Approximate Sound Pressure in μPa
Launching of the Space Shuttle	2,000,000,000
Full Symphony Orchestra	2,000,000
Diesel Freight Train at High Speed at 25 m	200,000
Normal Conversation	20,000
Soft Whispering at 2 m in Library	2,000
Unoccupied Broadcast Studio	200
Softest Sound Human can Hear	20

Sources at 1 m	Sound Pressure	SPL re 20 μPa
Rifle	200 Pa	140 dB
Threshold of pain	20 Pa	120 dB
2 Power Mowers	2 Pa	100 dB
1 Power Mower	1 Pa	94 dB
Street traffic	0.2 Pa	80 dB
Talking	0.02 Pa	60 dB
Library	0.002 Pa	40 dB
TV Studio	0.0002 Pa	20 dB
Reference Sound Pressure	0.00002 Pa	0 dB

Unit pW/m²

xpUnit pico(10^{-12})Watt per square metre

SI_unit $10^{-12}\text{kg}\cdot\text{s}^{-3}$

Dim M^+1T^{-3}

For measurements of sound pressure, 0 dB is loosely defined as the lower threshold of human hearing, objectively **quantified as 1 picowatt of sound power per square meter of area.**

A sound measuring 40 dB on the decibel sound scale would be 10^4 times greater than the threshold of hearing.

A 100 dB sound would be 10^{10} (ten billion) times greater than the threshold of hearing.

If the intensity of a given noise increases two-fold, the noise level in decibels (dB) increases by

(1) ~ 2 dB

(2) ~ 3 dB

(3) ~ 6 dB

(4) ~ 10 dB

Ratios of Intensities and Corresponding Differences in Sound Intensity Levels

$\frac{I_2}{I_1}$	$\beta_2 - \beta_1$
2.0	3.0 dB
5.0	7.0 dB
10.0	10.0 dB

Common Logarithm to a Number ($\log_{10} x$)	Log Value
Log 1	0
Log 2	0.3010
Log 3	0.4771
Log 4	0.6020
Log 5	0.6989
Log 6	0.7781
Log 7	0.8450
Log 8	0.9030
Log 9	0.9542
Log 10	1

$$\beta \text{ (dB)} = 10 \log_{10}(I/I_0),$$

Way to JRF

Noise or sound weighting curves

The ear is less sensitive to low audio frequencies, hence A-weighting is added to instrument-measured sound levels to account for the relative loudness experienced by the human ear.

The resulting octave band measurements are frequently combined together (logarithmic approach) to get a single A-weighted value that describes the sound; the quantities are reported in decibels (dB) (A). Other value weighting settings – B, C, D, and Z

> Frequency Weighting 'A'

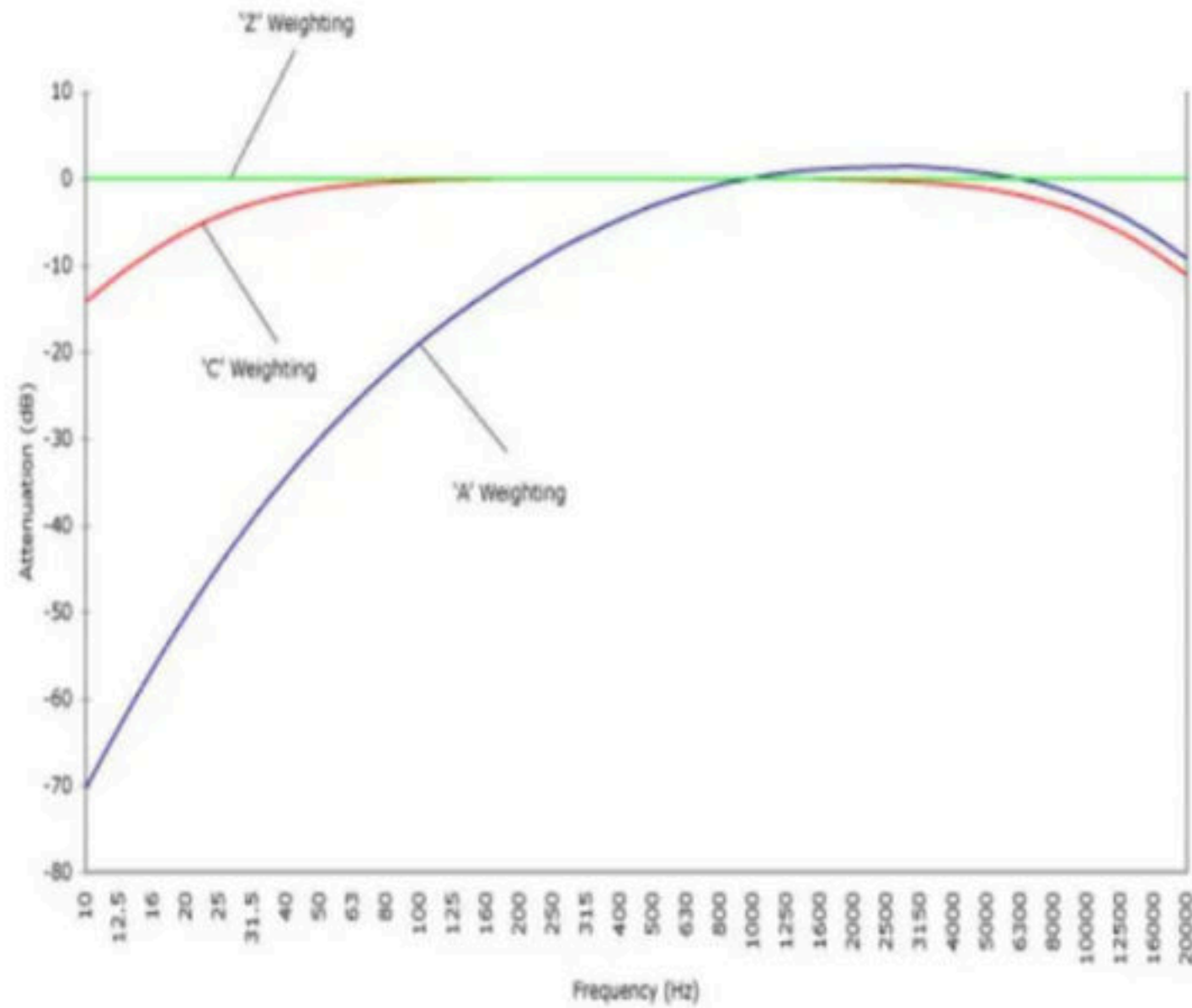
The 'A' weighting filter spans the entire frequency range of 20Hz to 20kHz, yet the shape closely resembles the human ear's frequency sensitivity.

> Frequency Weighting 'C'

This is a standard weighting of audible frequencies that is widely used to calculate Peak Sound Pressure.

> Frequency Weighting with a 'Z'

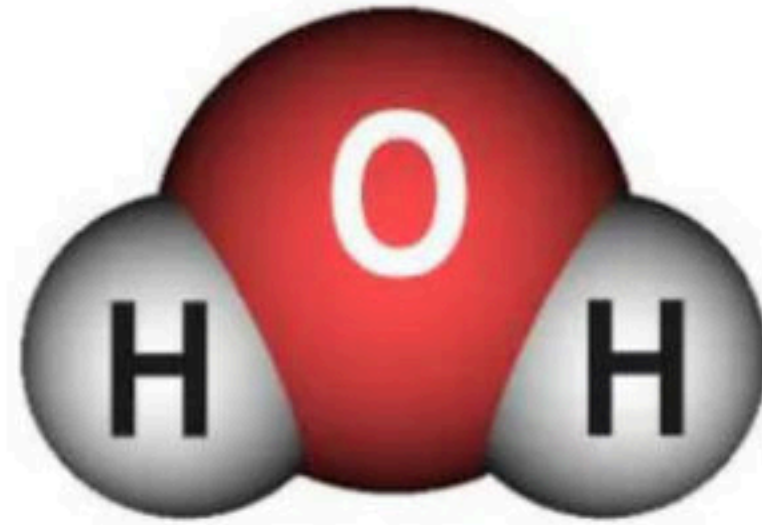
This is a 1.5dB flat frequency response from 10Hz to 20kHz, omitting microphone response.



- Way to JRF

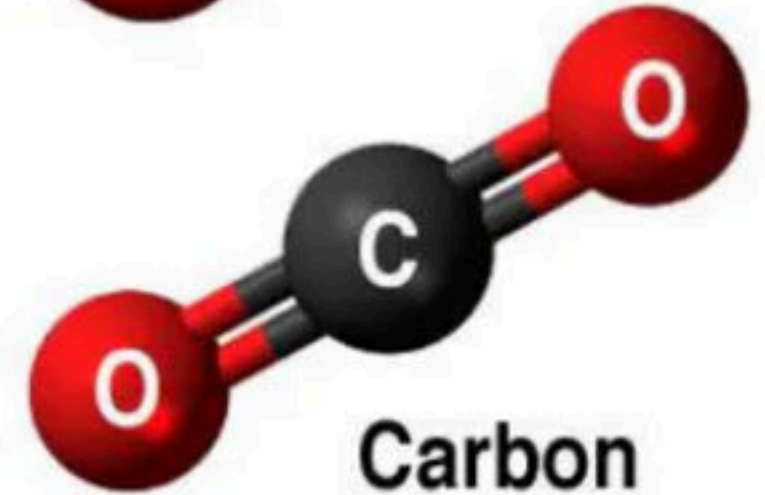
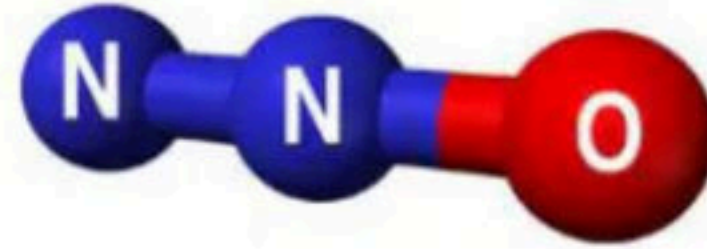
The heat-trapping nature of carbon dioxide and other gases was demonstrated in the mid-19th century. Their ability to affect the transfer of infrared energy through the atmosphere is the scientific basis of many instruments flown by NASA. There is no question that increased levels of greenhouse gases must cause the Earth to warm in response.





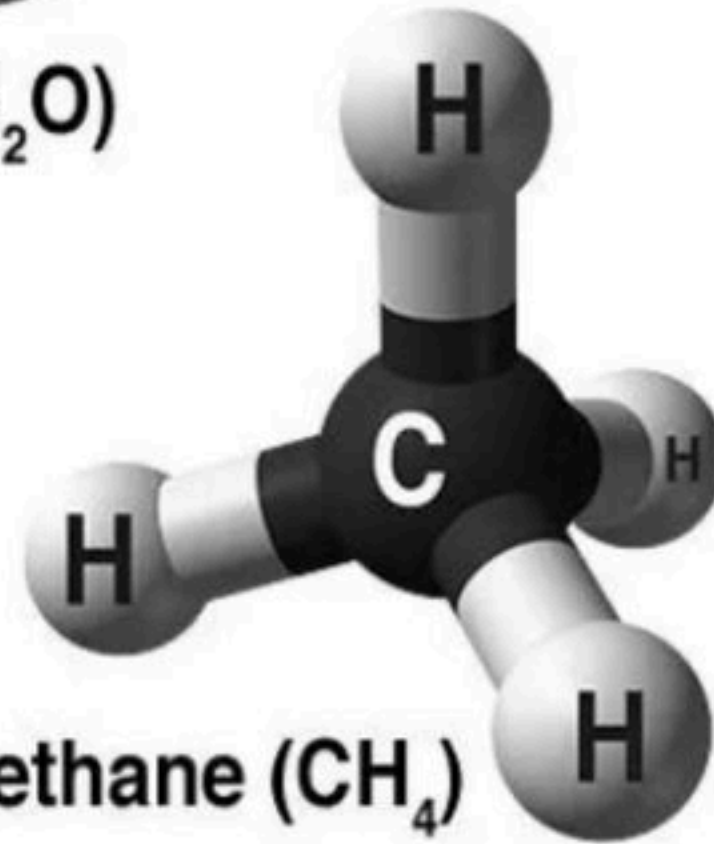
Water vapor (H_2O)

Nitrous oxide (N_2O)



Carbon dioxide (CO_2)

1. Water vapor (H_2O)
2. Carbon dioxide (CO_2)
3. Methane (CH_4)
4. Nitrous oxide (N_2O)
5. Ozone (O_3)
6. Chlorofluorocarbons (CFCs)
7. Hydrofluorocarbons (incl. HCFCs and HFCs)



Methane (CH_4)

Methane is mostly removed from the atmosphere by chemical reaction, **persisting for about 12 years**. Thus although methane is a potent greenhouse gas, its effect is relatively short-lived.

Nitrous oxide is destroyed in the stratosphere and removed from the atmosphere more slowly than methane, persisting for around **114 years**.

CO₂ released into the air dissolves into the ocean over a period of **20–200 years**.

NAVCLASSES - Code for Discount

Chemical species	100-yr GWPb	100-yr GWPb	Life-time (Yr)
Perfluoromethane		5700	>50000
Perfluoroethane		11900	10000
Sulphur hexafluoride		22200	3200
CFC-115		7200	1700
CFC-13		14000	640
CFC-114		9800	300
HFC-23		12000	260
Nitrous oxide		296	120/114
CFC-12		10600	100
CFC-113		6000	85
Halon-1301		6900	65
CFC-11		4600	45
Carbon tetrachloride		1800	35
Halon-2402			<20

Way to JRF - 100 Percentile by Navdeep Kaur

HCFC-142b		2400	19
HFC-134a		1300	13.8
HCFC-22		1700	11.9
Halon-1211		1300	11
HCFC-141b		700	9.3
Methane		23	8.4/12 c
Methyl chloroform		140	4.8
HFC-152a		120	1.4
Stratospheric water	-		1-6
Carbon monoxide	-		0.08 - 0.25
Tropospheric / surface ozone	-		0.01-0.05
Tropospheric NOx	-		0.01-0.03

Rank	Country	CO2 emissions (total)
1	China	10.06GT
2	United States	5.41GT
3	India	2.65GT
4	Russian Federation	1.71GT
5	Japan	1.16GT
6	Germany	0.75GT
7	Islamic Republic of Iran	0.72GT
8	South Korea	0.65GT
9	Saudi Arabia	0.62GT
10	Indonesia	0.61GT
11	Canada	0.56GT

12	Mexico	0.47GT
13	South Africa	0.46GT
14	Brazil	0.45GT
15	Turkey	0.42GT
16	Australia	0.42GT
17	United Kingdom	0.37GT
18	Poland	0.34GT
19	France	0.33GT
20	Italy	0.33GT
21	Kazakhstan	0.32GT

All emissions from 2018. Fuel combustion only.
GT = Metric gigatons

Rank	Country- Per Capita	CO2 emissions (total)
1	Saudi Arabia	18.48T
2	Kazakhstan	17.60T
3	Australia	16.92T
4	United States	16.56T
5	Canada	15.32T
6	South Korea	12.89T
7	Russian Federation	11.74T
8	Japan	9.13T
9	Germany	9.12T
10	Poland	9.08T
11	Islamic Republic of Iran	8.82T
12	South Africa	8.12T

13	China	7.05T
14	United Kingdom	5.62T
15	Italy	5.56T
16	Turkey	5.21T
17	France	5.19T
18	Mexico	3.77T
19	Indonesia	2.30T
20	Brazil	2.19T
21	India	1.96T

All emissions from 2018. Fuel combustion only. T = Metric tons



to JRF



Size of major carbon pools on the Earth (year 2000 estimates)

Pool	Quantity (gigatons)
Atmosphere	720
Ocean (total)	38,400
Total inorganic	37,400
Total organic	1,000
Surface layer	670
Deep layer	36,730
Lithosphere	
Sedimentary carbonates	> 60,000,000
Kerogens	15,000,000
Terrestrial biosphere (total)	2,000
Living biomass	600 – 1,000
Dead biomass	1,200
Aquatic biosphere	1 – 2
Fossil fuels (total)	4,130
Coal	3,510
Oil	230
Gas	140
Other (peat)	250

Natural hazards are naturally occurring physical phenomena caused either by rapid or slow onset events which can be

- **geophysical** (earthquakes, landslides, tsunamis and volcanic activity, avalanches),
- **hydrological** (avalanches and floods),
- **climatological** (extreme temperatures, drought and wildfires),
- **meteorological** (cyclones and storms/wave surges) blizzard, cyclones, droughts, hailstorms, heat waves, hurricanes, floods (caused by rain), and tornadoes. or
- **biological** (disease epidemics and insect/animal plagues).
- **Hydrometeorological**: the results of natural processes or phenomena of atmospheric, hydrological or oceanographic nature - are floods, tropical cyclones, drought and desertification. Due to global climate change these natural hazards are expected to rise.

Hurricanes, cyclones and typhoons are severe storms that form over tropical water

TYPES OF MITIGATION: STRUCTURAL

Mitigation of Structural Damage Structural mitigation measures are those that include or require some form of design, engineering, or other mechanical changes or enhancements in order to reduce the probability or effect of danger risk. When it comes to natural disasters, they are often referred to as "man manipulating nature."

Example of structural mitigation are:

- > Resistance construction
- > Structural modification
- > Building codes and regulatory measures
- > Relocation
- > Detection systems
- > Construction of community shelters
- > Physical modification
- > Treatment systems
- > Construction of barrier, deflection, or retention systems
- > Redundancy in life safety infrastructure

NON-STRUCTURAL

Modifications in human actions or natural processes that reduce the probability or effect of risk without requiring the use of engineered structures.

Regulatory policies reduce danger risk by imposing legal restrictions on human behaviour.

- > Land use management (Zoning).
- > Open space preservation (green spaces).
- > Protective resource preservation.
- > Denial of services to high-risk areas
- > Density regulation refers to the number of people who can live in a region where a risk is known or expected.
- > Building use regulations

Avalanches

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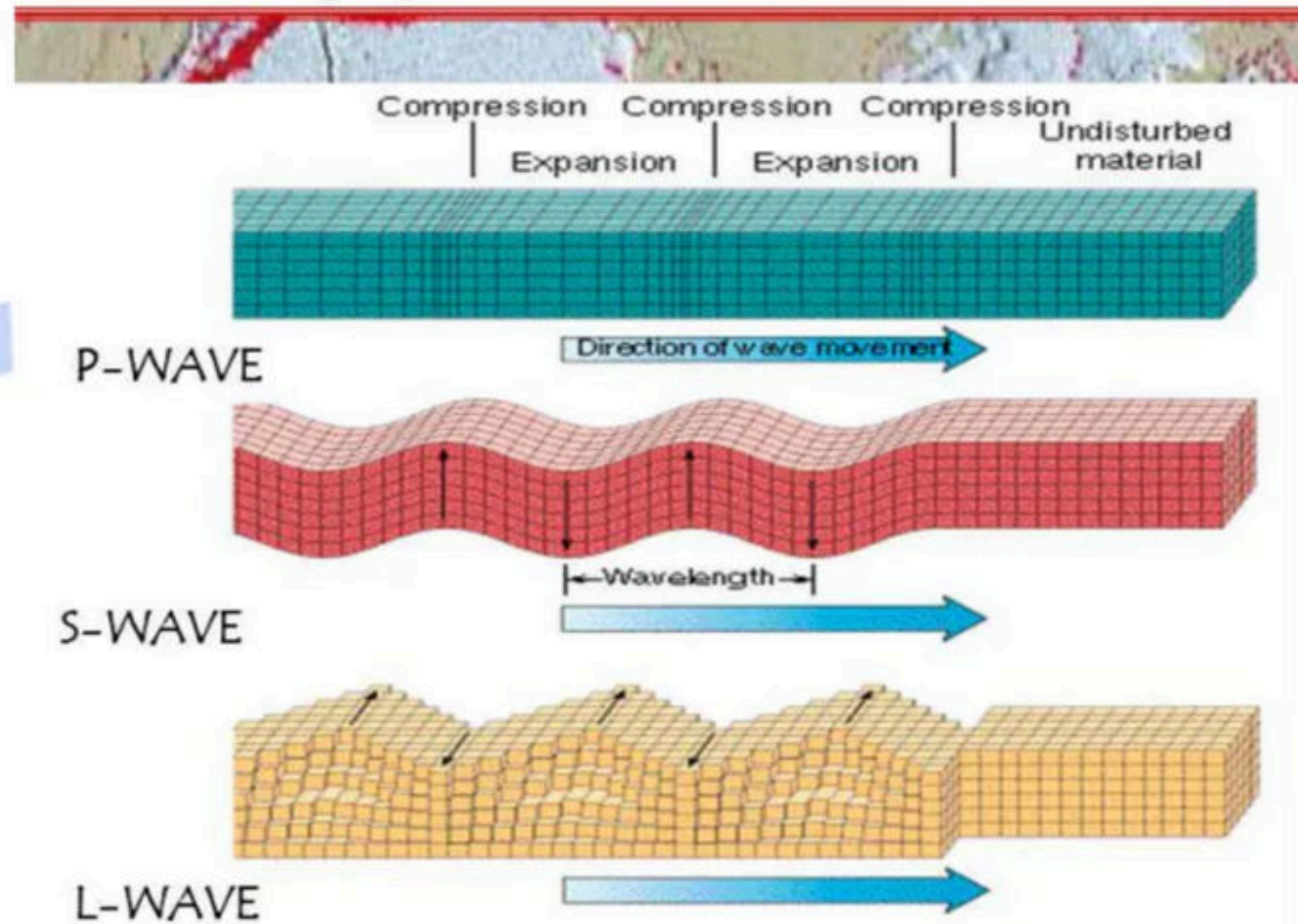


L-WAVES

L WAVES, OR LONGITUDINAL WAVES ARE THE SLOWEST WAVES, BUT THE MOST DESTRUCTIVE TO HUMAN STRUCTURES.

THEIR DESTRUCTIVE POWER IS THE RESULT OF THEIR VERTICAL UP AND DOWN MOVEMENT CAUSING ROCK TO RISE AND FALL AS THE WAVE PASSES THROUGH IT.

3 Types of Waves



THE COMBINED EFFECT OF P WAVE REFRACTION AND S WAVE ABSORPTION, IS THAT SOME AREAS ON EARTH WILL NOT RECEIVE ANY TYPE OF SEISMIC WAVE.

THE AREA THAT IS NOT HIT BY ANY SEISMIC WAVES IS CALLED THE SHADOW ZONE.

SURFACE WAVES:

1 LOVE WAVES

The first kind of surface wave is called a Love wave, named after A.E.H. Love, a British mathematician who worked out the mathematical model for this kind of wave in 1911. It's the **fastest surface wave and moves the ground from side-to-side.**

2 RAYLEIGH WAVES

The other kind of surface wave is the Rayleigh wave, named for John William Strutt, Lord Rayleigh, who mathematically predicted the existence of this kind of wave in 1885. A Rayleigh wave **rolls along the ground just like a wave rolls across a lake or an ocean.** Because it rolls, it moves the ground up and down, and side-to-side in the same direction that the wave is moving.

The Richter magnitude scale (often shortened to Richter scale) is the most common standard of measurement for earthquakes. It was **invented in 1935 by Charles F. Richter of the California** Institute of Technology as a mathematical device to compare the size of earthquakes. The Richter scale is used to rate the magnitude of an earthquake, that is the amount of energy released during an earthquake.

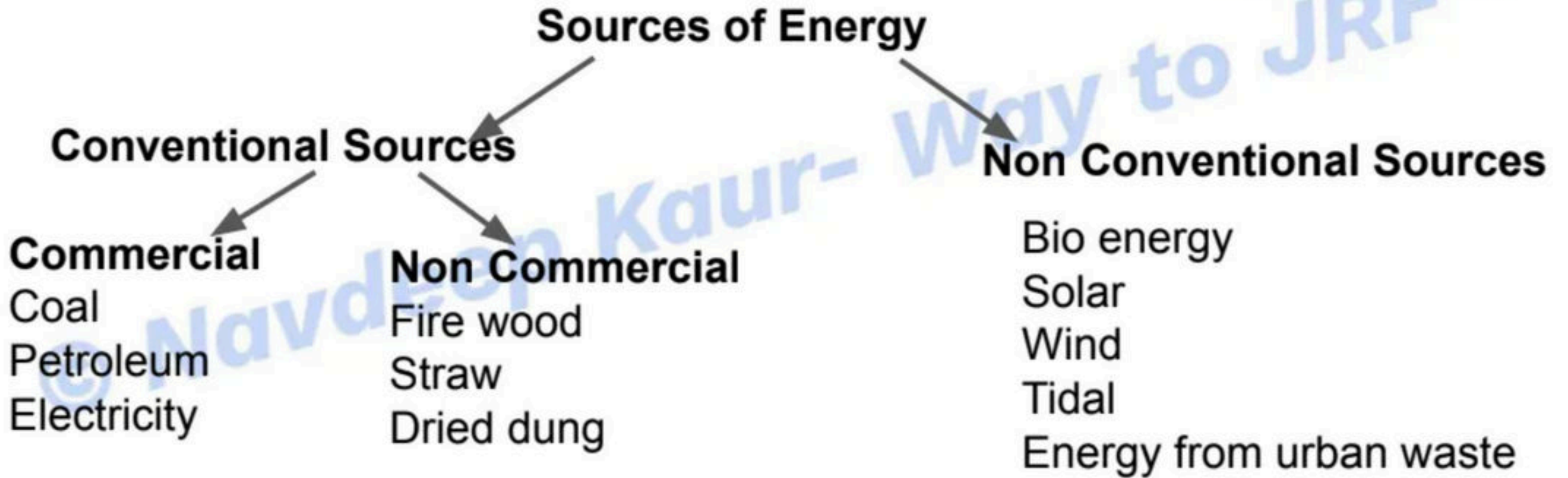
$$M_L = \log_{10} A - \log_{10} A_0(\delta) = \log_{10}[A/A_0(\delta)],$$

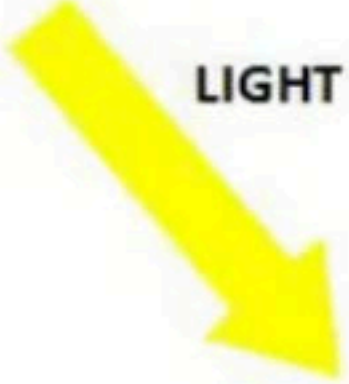
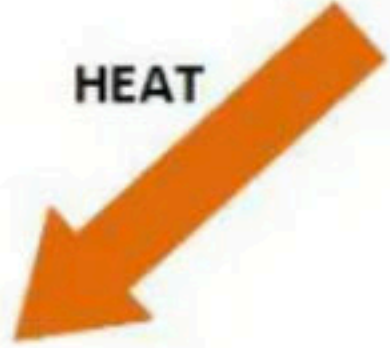
The Richter scale is a base-10 logarithmic scale, meaning that each order of magnitude is 10 times more intensive than the last one. In other words, a two is 10 times more intense than a one and a three is 100 times greater. In the case of the Richter scale, the increase is in wave amplitude.

That is, the wave amplitude in a **level 6 earthquake is 10 times greater than in a level 5 earthquake, and the amplitude increases 100 times between a level 7 earthquake and a level 9 earthquake. The amount of energy released increases 31.7 times between whole number values.**

Non Renewable energy

Renewable energy





JRF



Traps Heat
Hot Water
Plumber

≠

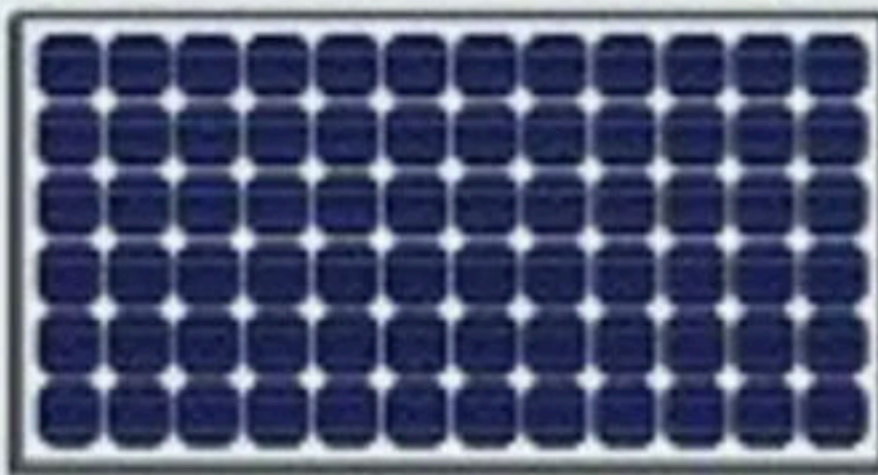
Uses light
Electricity
Electrician



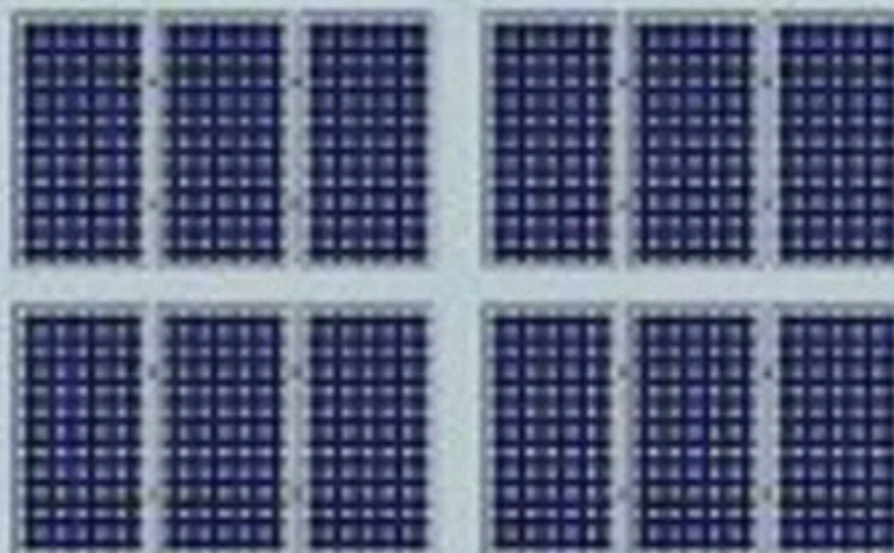
Photovoltaic (PV)
Cell



Module



Panel



Array

to JRF



INTERNATIONAL
SOLAR
ALLIANCE
FOUNDING
CONFERENCE
2018



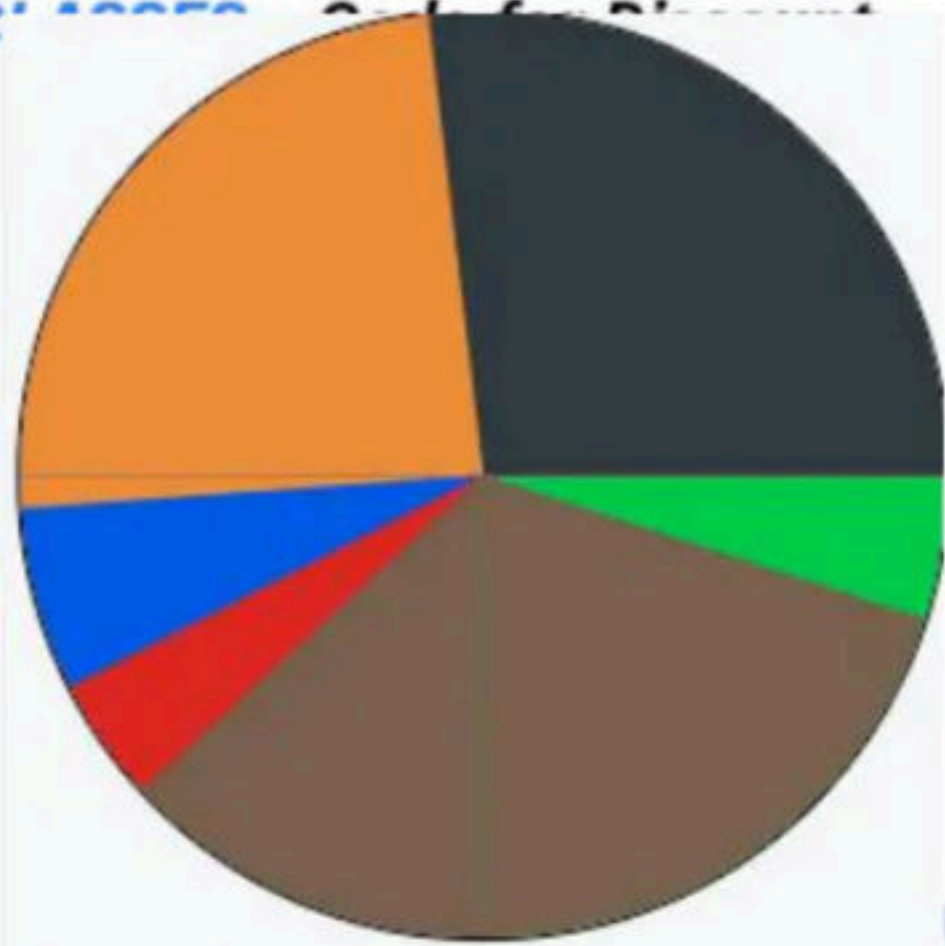
INTERNATIONAL SOLAR ALLIANCE

There is no specific body in place to address the specific solar technology deployment needs of the solar resource rich countries located between the Tropic of Cancer and the Tropic of Capricorn. Most of these countries are geographically located for optimal absorption of the sun's rays. There is a great amount of sunlight year-round which can lead to cost effective solar power and other end uses with high insolation of almost 300 sunny days in a year.

India, with the support of France, has invited nations to facilitate infrastructure for implementation of solar projects.

To achieve the objectives of ISA, by way of supplementing the national efforts of the member countries, through appropriate means will undertake following activities:

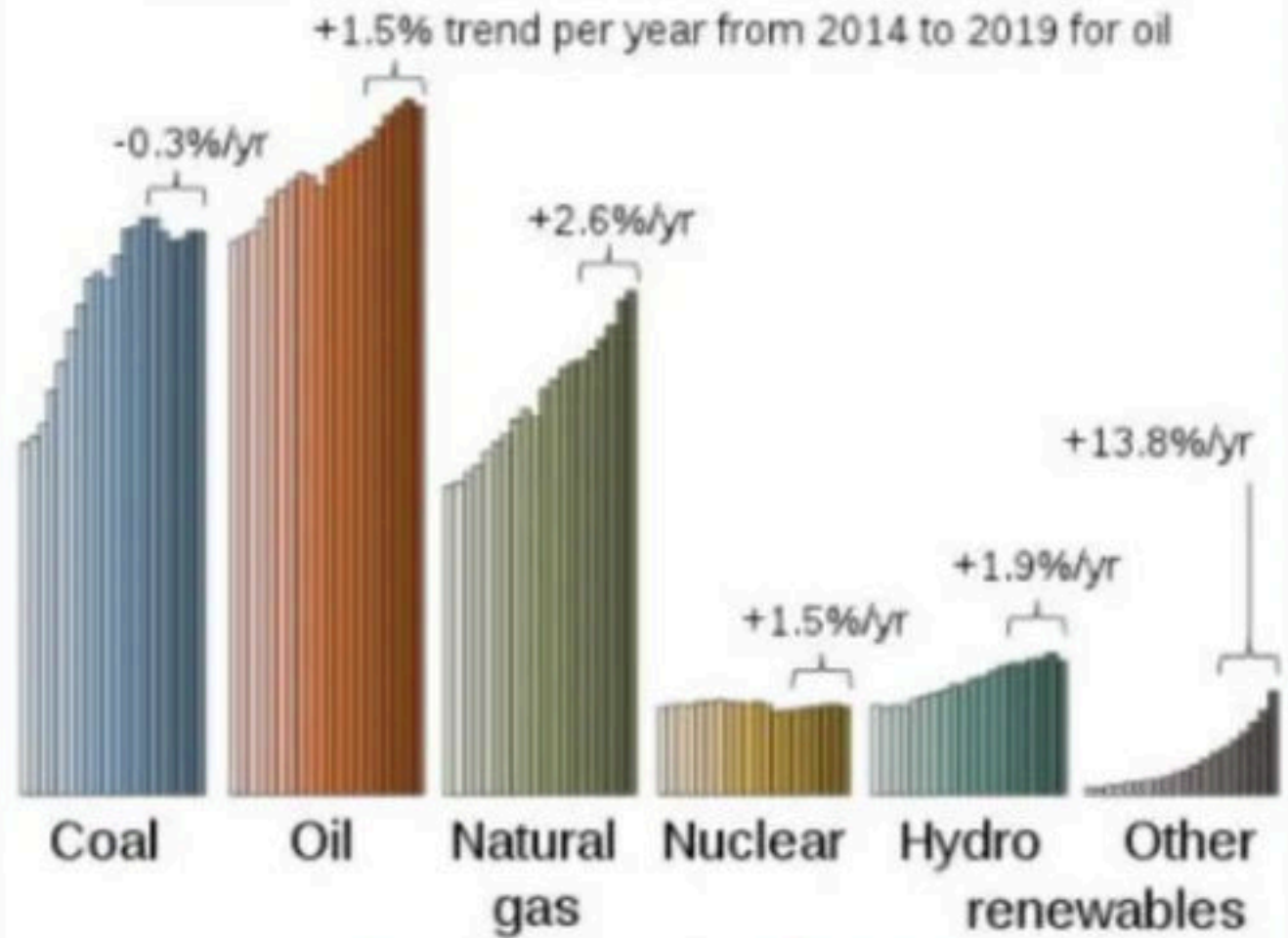
- **Collaborations for joint research, development and demonstration,** sharing information and knowledge, capacity building, supporting technology hubs and creating networks.
- Acquisition, diffusion and indigenization and **absorption of knowledge, technology and skills by local stakeholders** in the member countries.
- Creation of expert groups for development of common standards, test, monitoring and verification protocols.
- Creation of partnerships among country specific technology centres for supporting technology absorption for promoting energy security and energy access.
- Exchange of officials/ technology specialists for participation in the training programmes on different aspects of solar energy in the member countries.



World total primary energy consumption by fuel in 2019^[2]

- Coal (27%)
- Natural Gas (24.2%)
- Hydro (renewables) (6.4%)
- Nuclear (4.3%)
- Oil (33.1%)
- Others (renewables) (5%)

Global energy consumption, 2000 to 2019



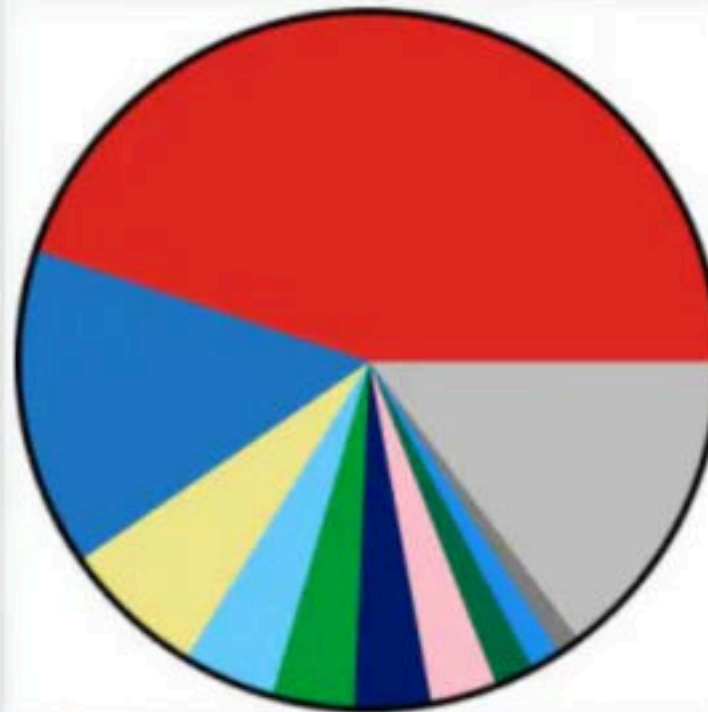
Coal, oil, and natural gas remain the primary global energy sources even as renewables have begun rapidly increasing.

Installed capacities of wind energy As of March 2021

- > China – 288.32 GW
- > United States – 122.32 GW
- > Germany – 62.85 GW
- > India – 38.63 GW
- > Spain – 27.24 GW.

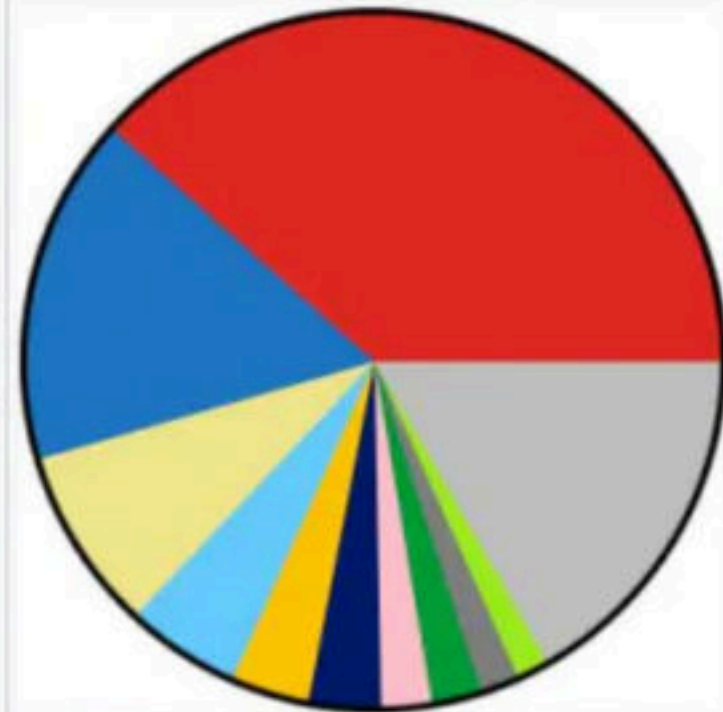
© Navdeep

Top 10 countries by added wind capacity in 2018^{[13][14]}



China	23,000 MW (44.8%)
United States	7,588 MW (14.8%)
Germany	3,371 MW (6.6%)
India	2,191 MW (4.3%)
Brazil	1,939 MW (3.8%)
United Kingdom	1,901 MW (3.7%)
France	1,565 MW (3.0%)
Mexico	929 MW (1.8%)
Sweden	720 MW (1.4%)
Canada	566 MW (1.1%)
Rest of the world	7,546 MW (14.7%)

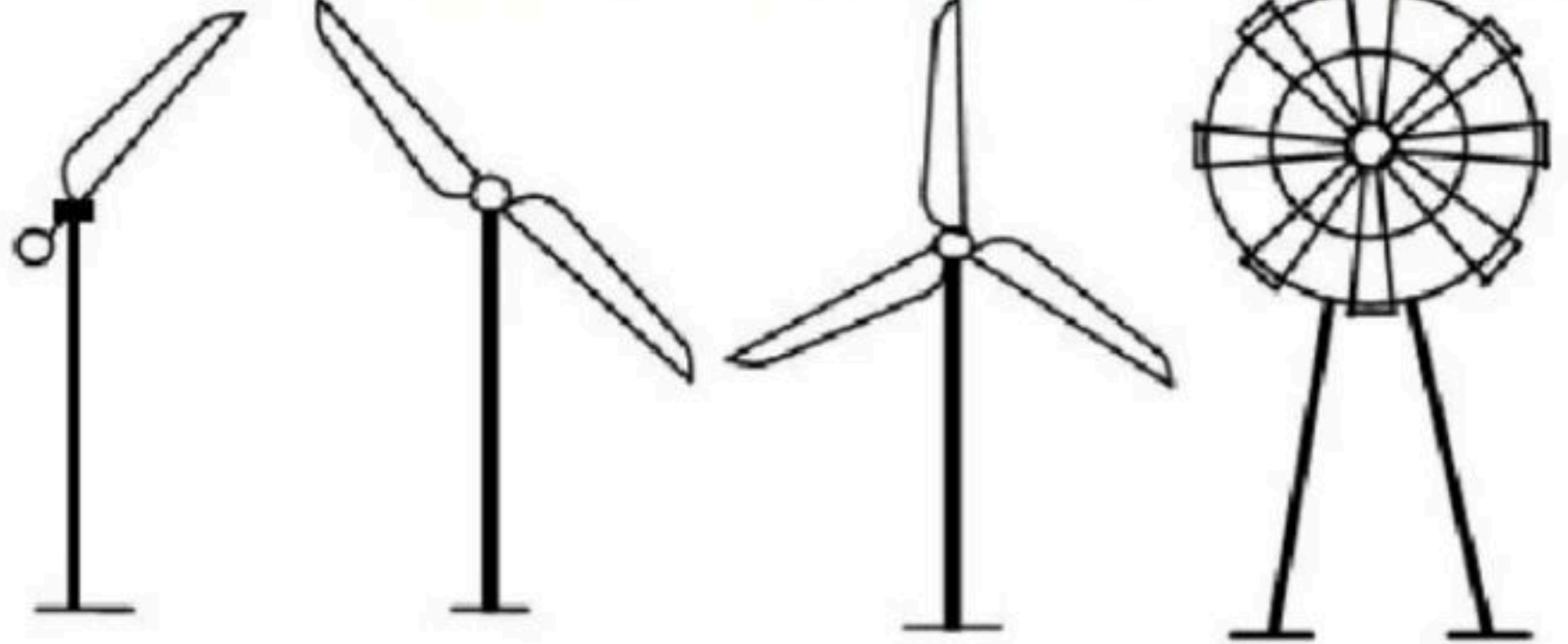
Top 10 countries by cumulative wind capacity in 2020^[15]



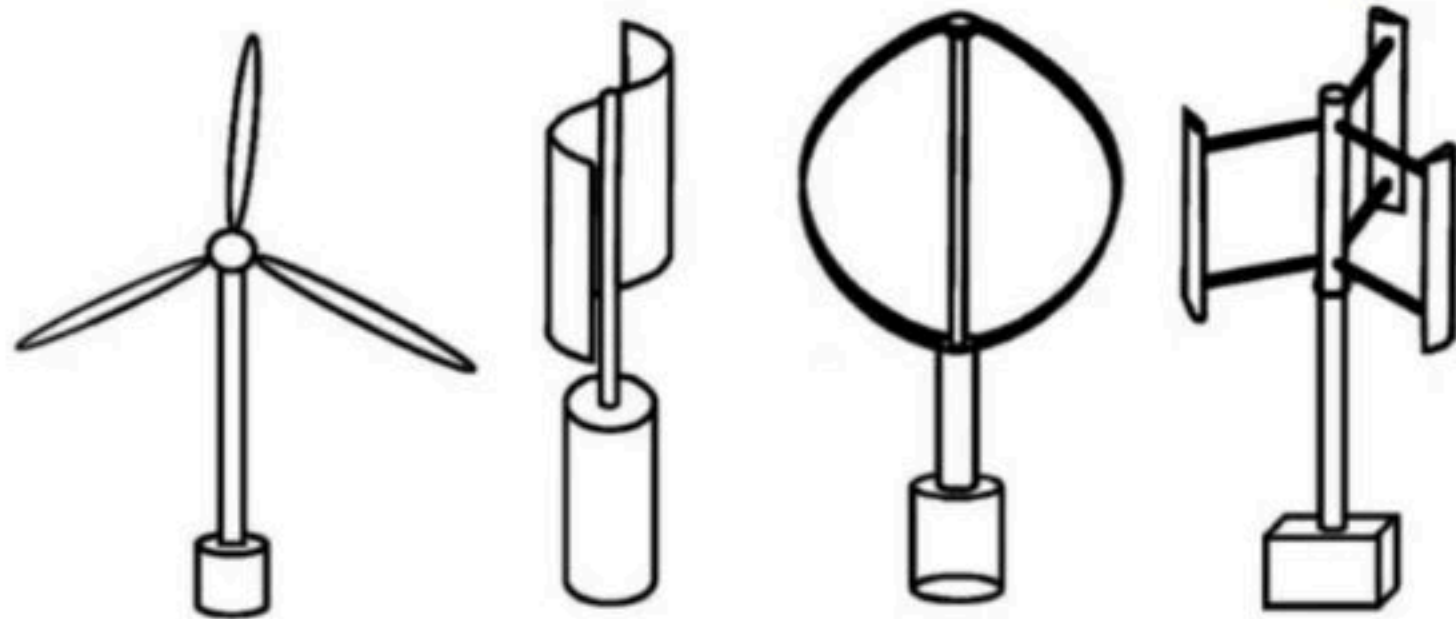
China	281,993 MW (38.5%)
United States	117,744 MW (16.1%)
Germany	62,184 MW (8.5%)
India	38,559 MW (5.3%)
Spain	27,089 MW (3.7%)
United Kingdom	24,665 MW (3.4%)
France	17,382 MW (2.4%)
Brazil	17,198 MW (2.3%)
Canada	13,577 MW (1.9%)
Italy	10,839 MW (1.5%)
Rest of the world	122,046 MW (16.6%)

NAVCLASSES - Code for Discount

Dutch Windmill



single bladed, two bladed, three bladed and multi bladed turbine



HAWT

Savonius

Darrieus

H-Rotor

The propeller-type horizontal-axis wind turbine (HAWT), the drag-based Savonius design, and the lift-based Darrieus and H-rotor vertical-axis wind turbines are all examples of important wind turbine types (VAWTs). The origins of VAWT diagrams can be seen here (Eriksson, 2008)

At present, in India, the total installed renewable power capacity is accounted for by:

- (a) Solar Power
- (b) Wind Power
- (c) Hydropower
- (d) Urban and industrial waste to energy conversion
- (e) Biomass power
- (f) Geothermal power

Choose the correct answer from the options given below

1. Only (a), (b), (c), (e) and (f)
2. Only (a), (b), (c), (d) and (f)
3. Only (a), (b), (c), (d) and (e)
4. (a), (b), (c), (d), (e) and (f)

वर्तमान में, भारत में, कुल स्थापित नवीकरणीय विद्युत क्षमता का हिसाब निम्नलिखित है:

- (a) सौर ऊर्जा
- (b) पवन ऊर्जा
- (c) जलविद्युत
- (d) ऊर्जा रूपांतरण के लिए शहरी और औद्योगिक कचरा
- (e) बायोमास शक्ति
- (f) भू-तापीय शक्ति

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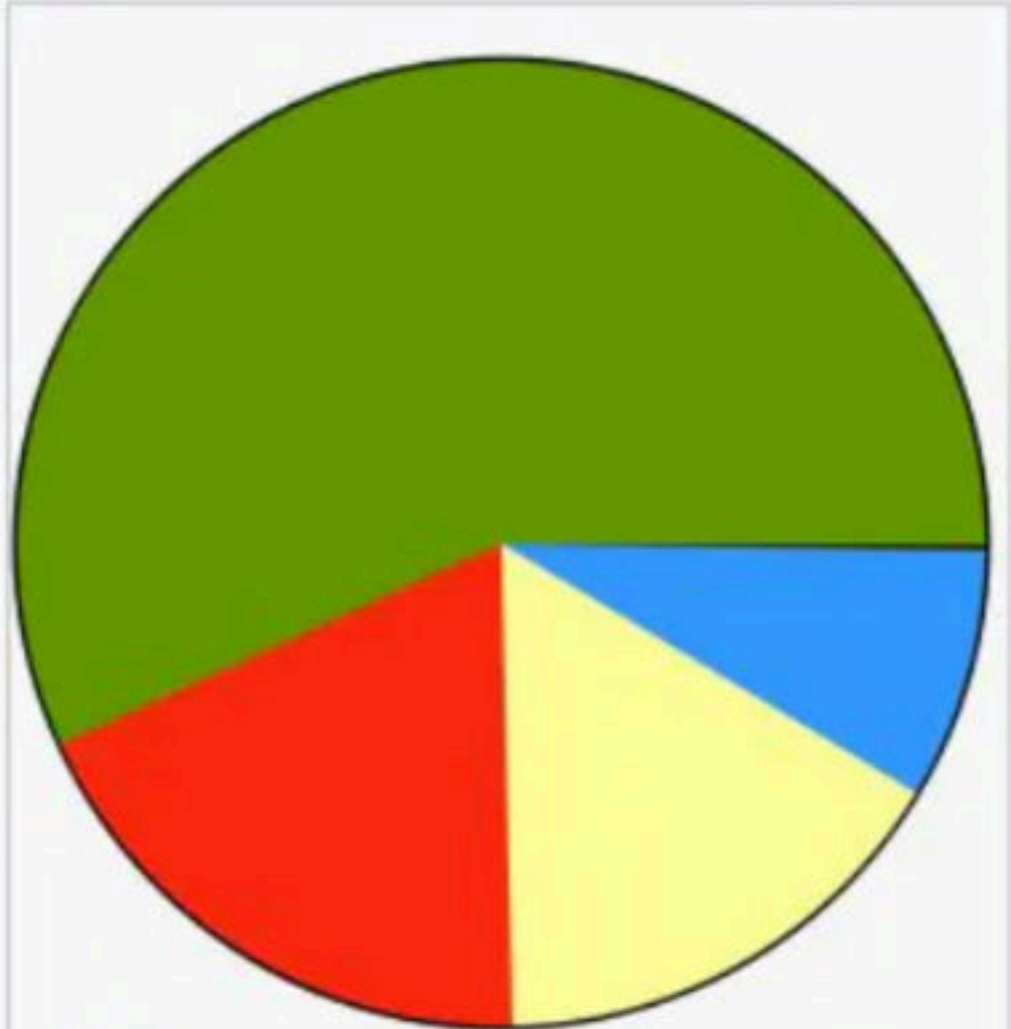
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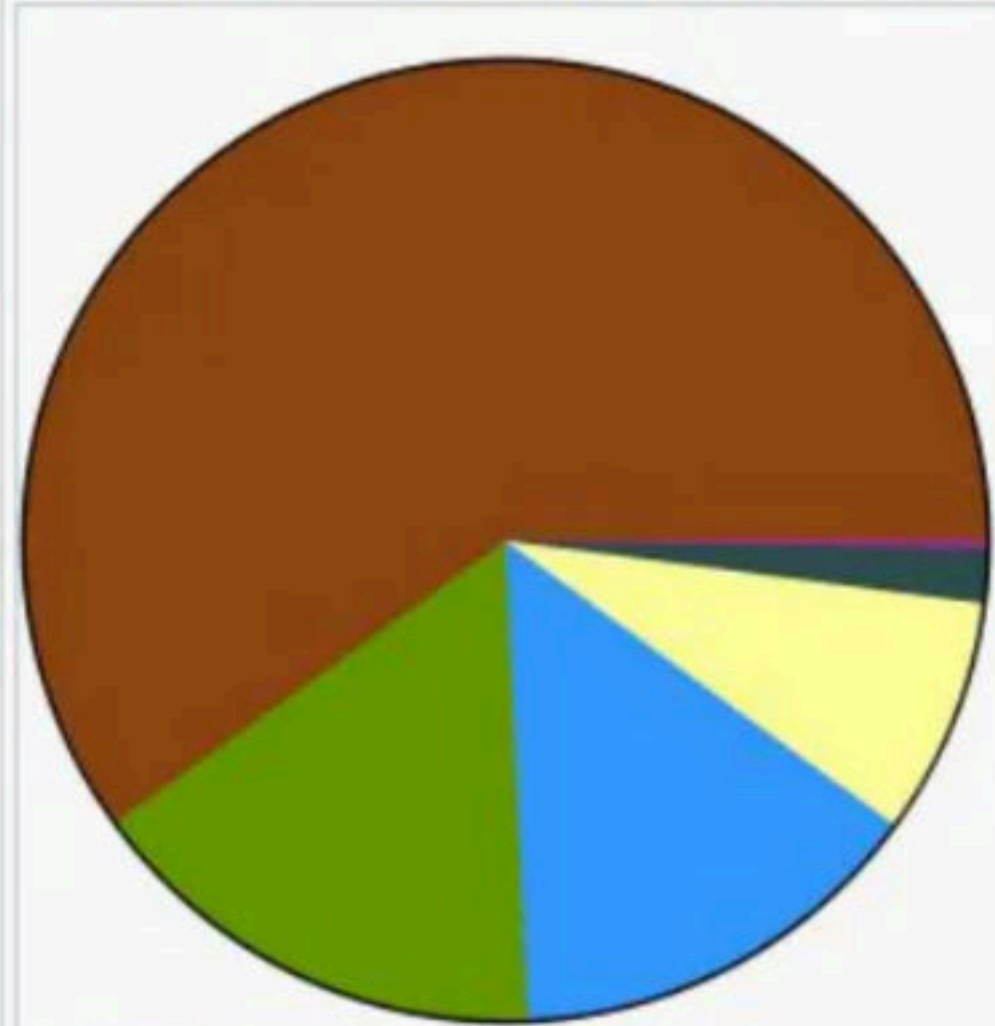
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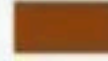





Installed grid interactive renewable power capacity in India as of 28 February 2016 (excluding large hydro)^{[1][7]}



	Wind Power: 29,151.29 MW (56.8%)
	Solar Power: 9,566.66 MW (18.6%)
	Biomass Power: 8,182 MW (15.9%)
	Small Hydro Power: 4,346.85 MW (8.5%)
	Waste-to-Power: 114.08 MW (0.2%)

Installed grid power capacity from all sources in India as of 31 May 2018^[12]



	Coal: 189,047.88 MW (59.9%)
	Renewable, except large Hydroelectric: 50,018 MW (15.9%)
	Large Hydro: 44,413.43 MW (14.1%)
	Gas: 25,329.38 MW (8.0%)
	Nuclear: 5,780 MW (1.8%)
	Diesel: 837.63 MW (0.3%)

Q31. The potential of geothermal power in India is approximately

भारत में भूतापीय शक्ति की क्षमता लगभग है

- (1) 10 GW
- (2) 5 GW
- (3) 20 GW
- (4) 25 GW

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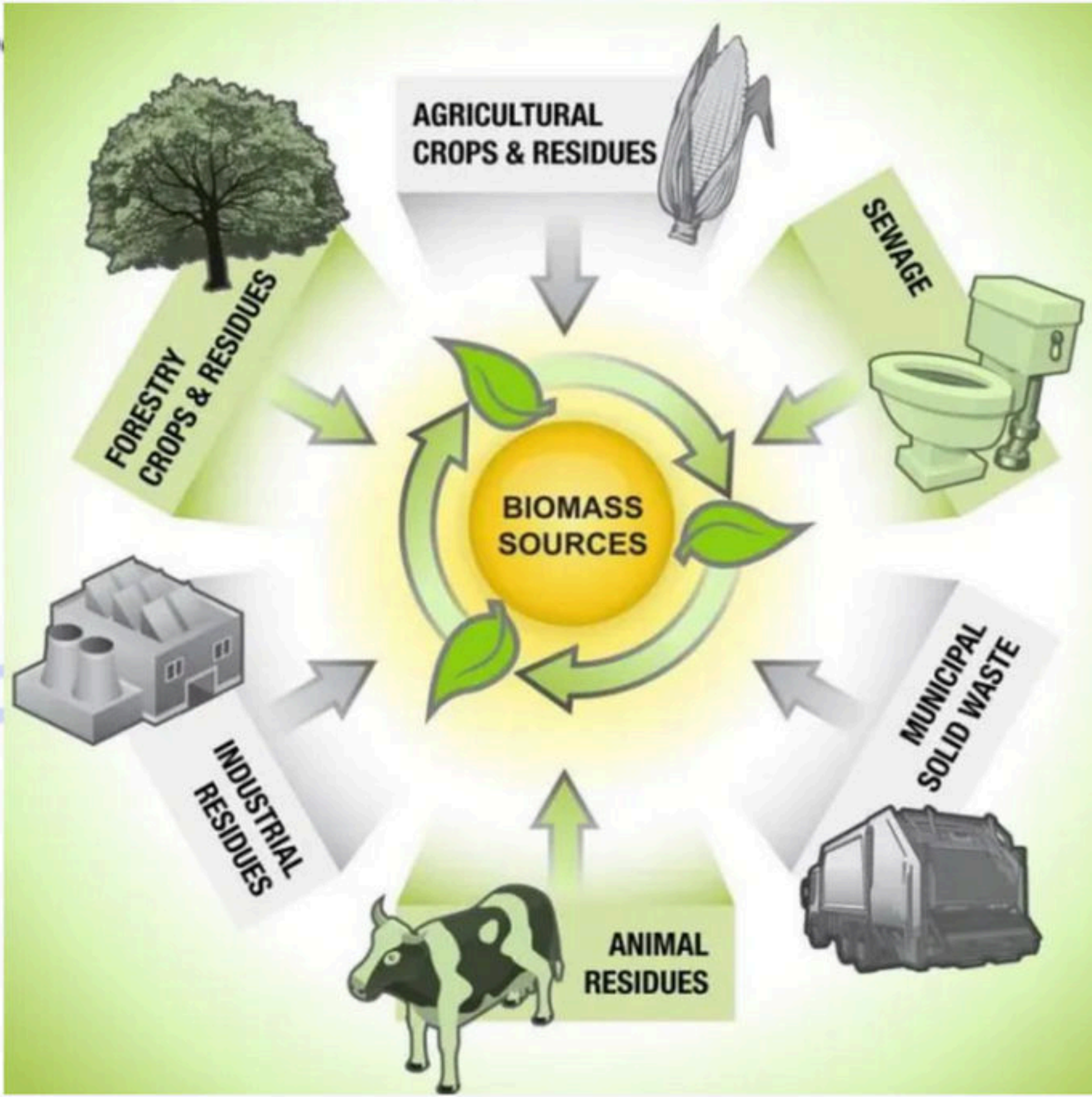
Q31. The potential of geothermal power in India is approximately

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- (1) 10 GW
- (2) 5 GW
- (3) 20 GW
- (4) 25 GW

The estimated potential for geothermal energy in India is about 10000 MW.

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JRF

© No

Allergen is any substance (antigen), most often eaten or inhaled, that is **recognized by the immune system and causes an allergic reaction**. Dust, pollen and pet dander are all common allergens, but it is possible to be allergic to anything.

Carcinogens

Carcinogenic substances are associated with causing or promoting **cancer in humans and animals**.

SDS sheets (List of substances Safety Data Sheets) will list if a substance is a carcinogen or suspected carcinogenic agent. In addition, newer containers will indicate such risks. Common carcinogens include benzene, vinyl chloride, formaldehyde, dioxane, and acrylamide.

Mutagens

Mutagens are substances that change the genetic information of an organism, usually by **changing DNA**. Mutagens are usually also carcinogens as mutations often cause cancer. Common mutagens include ethidium bromide, formaldehyde, dioxane, and nicotine.

Teratogens

Teratogens are substances that cause **harm to the fetus or embryo during pregnancy**, causing birth defects while the mother shows no signs of toxicity.

Common teratogens include ethanol, mercury compounds, lead compounds, phenol, carbon disulfide, toluene and xylene.

Tuberculosis (TB) is a disease caused by bacteria called Mycobacterium tuberculosis. The bacteria usually attack the lungs, but they can also damage other parts of the body. TB spreads through the air when a person with TB of the lungs or throat coughs, sneezes, or talks.

Enteritis is inflammation of the small intestine. It is most commonly caused by food or drink contaminated with pathogenic microbes, such as serratia, but may have other causes such as NSAIDs, cocaine, radiation therapy as well as autoimmune conditions like Crohn's disease and coeliac disease.

Polio, short for poliomyelitis, or infantile paralysis, is an infectious disease caused by the poliovirus.

Polio (infantile paralysis) is a communicable disease, which is categorized as a disease of civilization. Polio spreads through human-to-human contact, usually entering the body through the mouth due to faecally contaminated water or food.

Interactions between organisms

Intraspecific interaction refers to interactions between members of the same species, whereas interspecific interaction refers to interactions between individuals with different species in a community.

**A value of 0 means there is no effect,
a value of – means there is a negative effect, and
a value of + means there is a positive effect.**

Mutualism (+, +)

Mutualism is a type of interaction where both participating species gain.

Commensalism (positive, with no effect)

A biological connection in which one organism benefits but another organism neither benefits nor suffers harm.

Parasitism (+ , –)

Parasitic interactions in which the parasite feeds on the host. The parasite benefits, while the host suffers.

Neutralism (no effect, no effect) interactions occur when no benefit is gained by the interacting species.

Amensalism (–, 0)

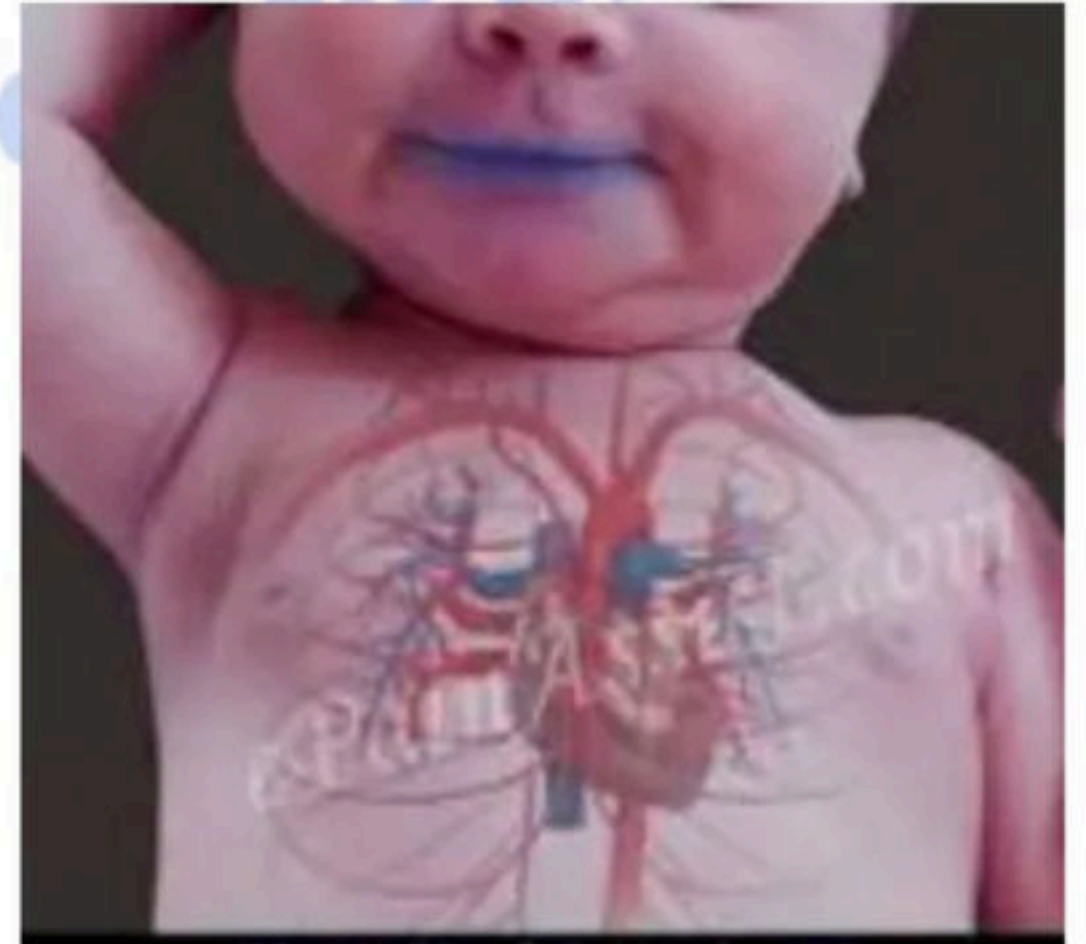
the form of interaction in which one creature is harmed but another organism doesn't really get benefit.

Competition (–. –) is a sort of relationship in which one organism's fitness is diminished by the fitness of another organism.

The most common symptom of **blue baby syndrome** is a **blue discoloration of the skin around the mouth, hands, and feet**. This is also known as cyanosis and is a sign that the child or person is not getting enough oxygen.

Other potential symptoms of blue baby syndrome include:

- difficulty breathing
- vomiting
- diarrhea
- lethargy
- increased salivation
- loss of consciousness



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POSITIVE FEEDBACK MECHANISM

a chain reaction where small change creates an effect that causes an even bigger change

THE ALBEDO EFFECT

ability of a surface to reflect light

REFLECTED
40%

SOIL ALBEDO

Exposed land is darker coloured and absorbs more energy. As the ice melts, more land is exposed. As a result it absorbs more heat, melting more ice.

60%
ABSORBED

REFLECTED
90%

SNOW ALBEDO

A small amount of snow melt exposes darker ground which absorbs more radiation, leading to more snow melt.

REFLECTED
10%

OCEAN ALBEDO

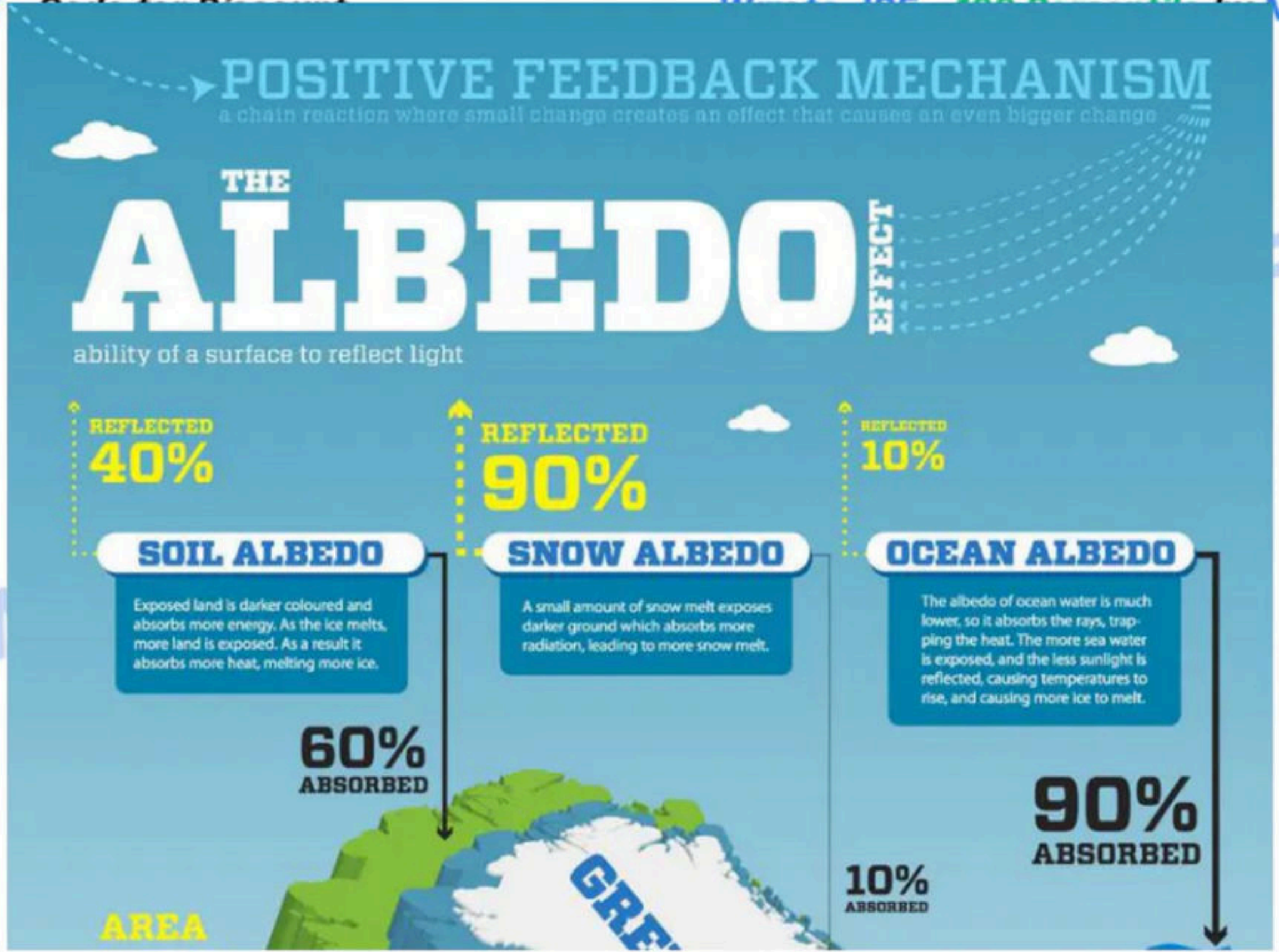
The albedo of ocean water is much lower, so it absorbs the rays, trapping the heat. The more sea water is exposed, and the less sunlight is reflected, causing temperatures to rise, and causing more ice to melt.

90%
ABSORBED

10%
ABSORBED

AREA

GREEN



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'Solar Water Still'

The solar still can be effectively used to obtain sufficient quantities of good water from salt water in regions where the insulation of solar energy is high. A square foot of still area can produce approximately 1/2 to 3/4 lb of distilled water per day.

Produce potable water by using solar energy

In a solar still, impure water is contained outside the collector, where it is evaporated by sunlight shining through clear plastic or glass. The pure water vapour condenses on the cool inside surface and drips down,

Solar Water Distilling

Simple Survival Water Distilling



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<u>Organic materials</u>	<u>C/N ratios</u>
Duck dung	8
Human excreta	8
Chicken dung	10
Goat dung	12
Pig dung	18
Sheep dung	19
Cow dung	24
Buffalo dung	24
Water hyacinth	25
Elephant dung	43
Maize straw	60
Rice straw	70
Wheat straw	90
Saw dust	200

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Name of the mineral	Top producer the mineral
Iron ore	Odisha
Coal	Jharkhand
Manganese	Odisha
Bauxite	Odisha
Mica	Andhra Pradesh
Gold	Karnataka
Lime stone	Andhra Pradesh
Barytes	Andhra Pradesh
Natural Gas	Assam
Copper	Madhya Pradesh
Diamond	Madhya Pradesh
Lignite	Tamil Nadu
Nickel	Orissa
Lead	Rajasthan
Uranium	Kerala
Chromite	Orissa

Golden Tips

If have less time then for **FREE Learners** just go through All Videos of **Maha Episode paper 1 & Paper 2 Commerce**

Then **Keep solving PYQs 2020 to 2018 all Shifts**

Then **Expected MCQs** in **Question Bank** book

Then **2017 to 2012 First**

Keep **Giving Test Series on Unacademy**

Then if have time PYQs till 2004 (Skip too old concepts like illogical topics & current affairs of back dates)

Keep Attending My **Free Classes 7.30AM, 10PM**



Golden Tips

If have less time then for **Plus Learners** just go through All Videos of **Complete Course** in my Profile: It will complete **Concepts & 2020 PYQs & Paper 2 Commerce**

Then **Keep solving PYQs 2020 to 2018 all Shifts**

Then **Expected MCQs** in **Question Bank** book **New Course** on 25 August on **Expected MCQs**

Then **2017 to 2012 First**

Keep **Giving Test Series on Unacademy**

Then if have time PYQs till 2004

(Skip too old concepts like illogical topics & current affairs of back dates)

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2012 to Dec 2020 All PYQs & Expected MCQs with Solutions



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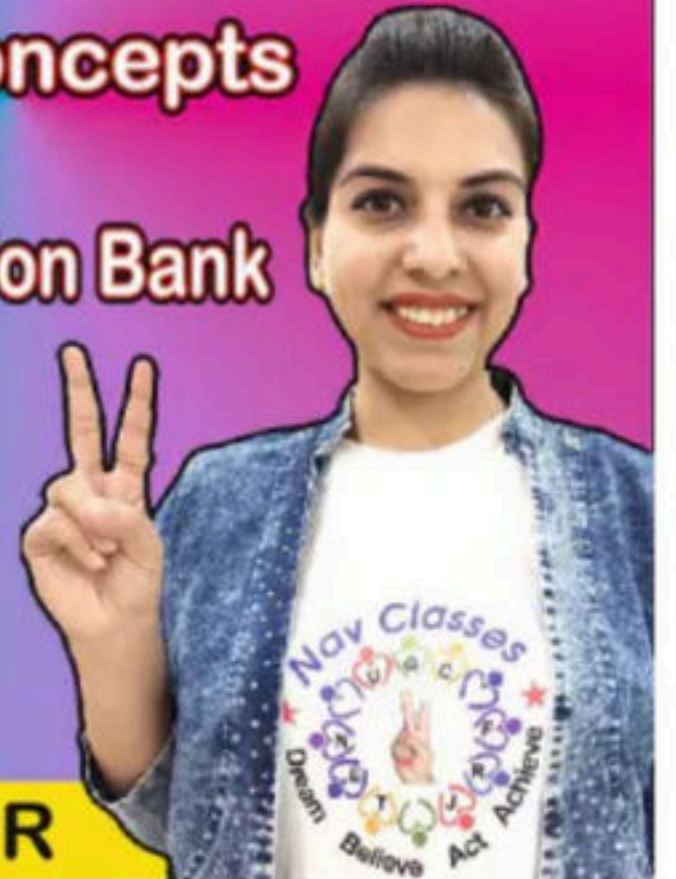
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Kaur in Subscription
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Both**

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- ★ Complete Paper 1
 - Concepts,
 - PYQs 2020 All Shifts to 2004
 - Expected MCQs Prepared by Navdeep Kaur
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- ★ Paper 2 in Same Subscription
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अपने आप को Proove
करके दिखाना है

Dream, Believe, Act, Achieve



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Be active during Preparation

- Biggest issue Panic
- Ur fear kills ur time



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How to Manage and deal with Ques.

Read Ques carefully

Best to be Fast but don't skip Important



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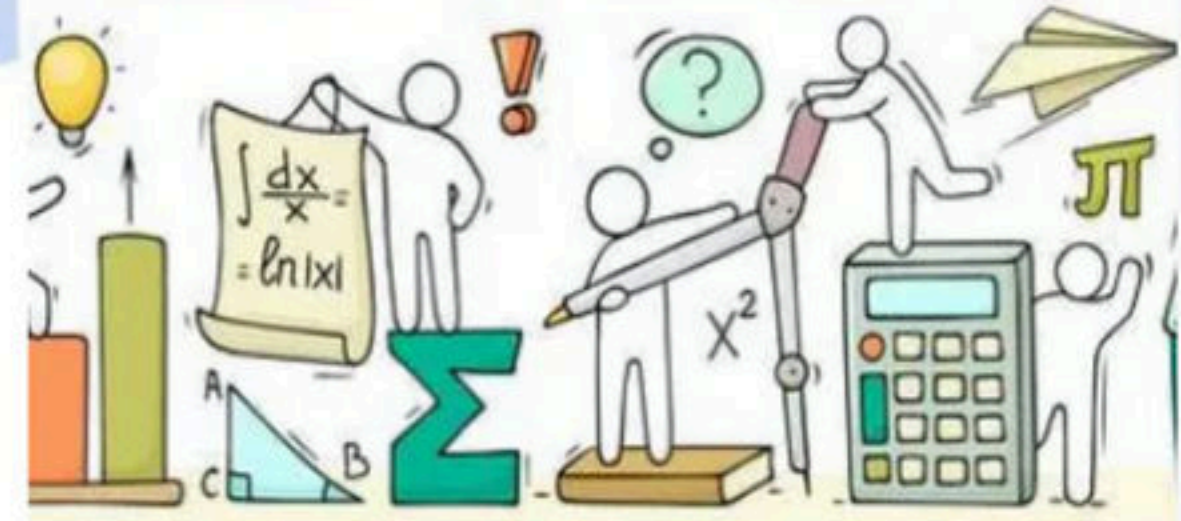
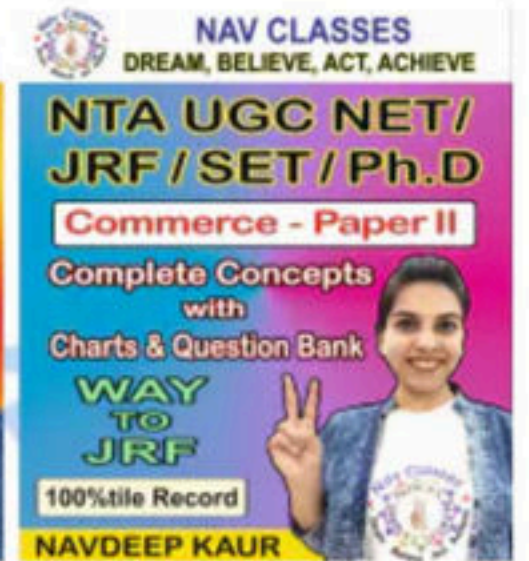
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In Data Interpretation

Mathematical reasoning

- Do random Divide Daily
- Slowly read Ques
- Make equation for that part only
- Then read further, then solve
- If not able to, go backward
- Do from options



Unit-I Teaching Aptitude

- Levels of teaching (Memory, Understanding and Reflective),
- Learner's characteristics: (Academic, Social, Emotional and Cognitive),
- Methods : Teacher centred vs. Learner centred methods; Off-line vs. On-line methods (Swayam, Swayamprabha, MOOCs etc.).
- Teaching Support System: Traditional, Modern and ICT based.
- Evaluation Systems: Choice Based Credit System in Higher education, Computer based testing, Innovations in evaluation systems.





Unit-II Research Aptitude

- Types, and Characteristics,
- Positivism and Post positivist approach to research.
- Methods: Experimental, Descriptive, Historical, Qualitative and Quantitative methods.
- Steps of Research.
- Thesis and Article writing: Format and styles of referencing.
- Application of ICT in research.
- Research ethics.

Unit-III Comprehension

Unit-IV Communication

- **Meaning, types**
- **Effective communication**
- **Inter-Cultural and group**
- **Classroom communication.**
- **Barriers to effective communication.**
- **Mass-Media and Society**



Unit-V Mathematical Reasoning and Aptitude

- Types of reasoning.
- Number series,
- Letter series, Codes and Relationships.
- (Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages etc.).

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Unit-VI Logical Reasoning



- Understanding the structure of arguments: argument forms, structure of categorical propositions, Mood and Figure, Formal and Informal fallacies,
- Uses of language, Connotations and denotations of terms, Classical square of opposition.
- Evaluating and distinguishing deductive and inductive reasoning.
- Analogies.
- Venn diagram: Simple and multiple use for establishing validity of arguments.

Indian Logic: Means of knowledge.

- **Pramanas: Pratyaksha (Perception), Anumana (Inference), Upamana (Comparison), Shabda (Verbal testimony), Arthapatti (Implication) and Anupalabddhi (Non-apprehension).**
- **Structure and kinds of Anumana (inference), Vyapti (invariable relation), Hetvabhasas (fallacies of inference).**



Unit-VII Data Interpretation

- Table-chart and Line-chart

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Unit-VIII Information and Communication Technology (ICT)

- ICT: General abbreviations and terminology.
- Basics of Internet, Intranet, E-mail, Audio and Video-conferencing.
- Digital initiatives in higher education.
- ICT and Governance.
- Data representation
- Fundamentals



Unit-IX People, Development and Environment

- **Development and environment: Millennium development and Sustainable development goals.**
- **Human and environment interaction: Anthropogenic activities and their impacts on environment.**
- **Environmental issues: Local, Regional and Global; Air pollution, Water pollution, Soil pollution, Noise pollution, Waste (solid, liquid, biomedical, hazardous, electronic), Climate change and its Socio-Economic and Political dimensions.**
- **Impacts of pollutants on human health.**
- **Natural and energy resources: Solar, Wind, Soil, Hydro, Geothermal,**
- **Biomass, Nuclear and Forests.**

- **Natural hazards and disasters: Mitigation strategies.**
- **Environmental Protection Act (1986), National Action Plan on Climate Change, International agreements/efforts -Montreal Protocol, Rio Summit,**
- **Convention on Biodiversity, Kyoto Protocol, Paris Agreement, International Solar Alliance.**

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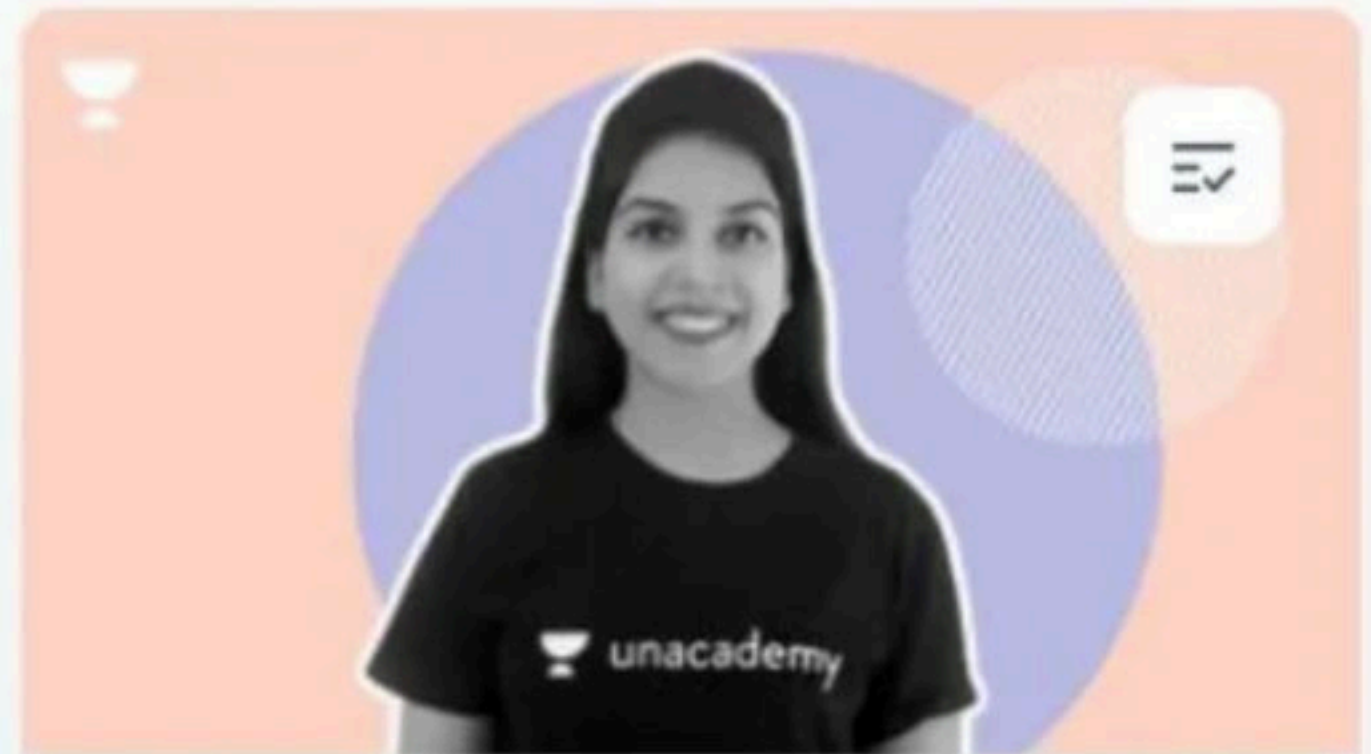
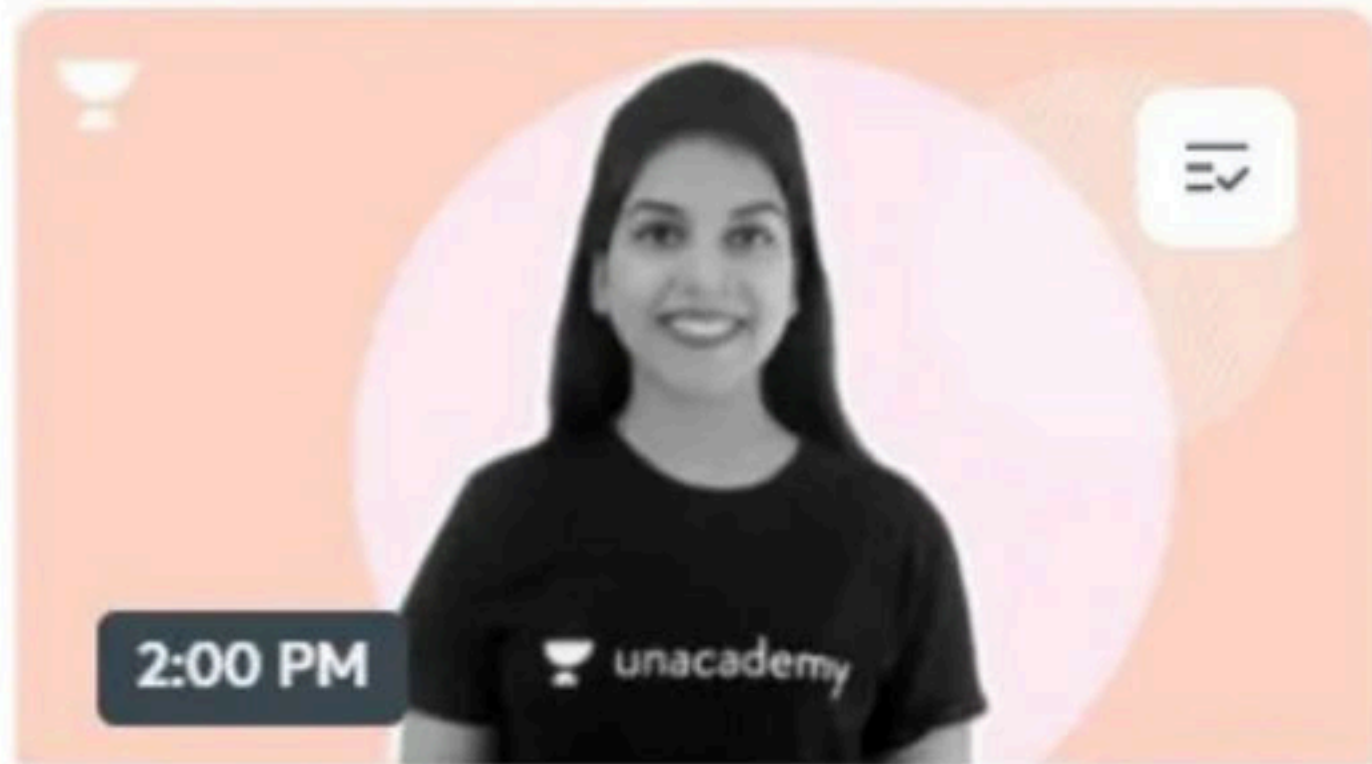
Unit-X Higher Education System

- Institutions of higher learning and education in ancient India.
- Evolution of higher learning and research in Post Independence India.
- Oriental, Conventional and Non-conventional learning programmes in India.
- Professional, Technical and Skill Based education.
- Value education and environmental education.
- Policies, Governance, and Administration.



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Ended on Apr 27, 2021 • 20 lessons

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In this course, Navdeep Kaur will cover important topics under Commerce. All the important topics will be discussed in detail and would be helpful for aspirants preparing for the NTA-UGC NET JRF exam. Learners a... [Read more](#)

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Starts on Jul 7
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Till 21st September we can have **40 Days**

10 - 10 Units in **Paper 1 and Paper 2**

4 Days each if we do **Both Papers Daily**

Divide Time between **Both Papers** keep **2 : 3 Ratio**

© **Like 2 to easy for u and 3 ratio to Difficult for you**

Example

If you Have 5 hours for Self Study After Subscription Classes or All your work

Then

2 Hours paper 1 (As Navdeep Kaur also providing REVISION in Free Spacial classes & Nav Classes Youtube, Maha Episodes keep watching them live)

3 Hours to Paper 2 your subject (For Commerce management Maha Episodes will come during last days for Revision)

Samagra Shiksha Scheme 2.0 is a new version of the Samagra Shiksha Scheme.

- 4 Aug 2021

The scheme will be in effect from **April 1, 2021 to March 31, 2026**.

For this period, a **budget of Rs 2.94 lakh crore** has been approved.

The scheme covers **1.16 million schools, over 156 million students, and 5.7 million teachers** from **pre-primary to senior secondary level in government and aided schools**.

The scheme provides up to **Rs 500 per child per year** for **Teaching Learning Materials (TLM), indigenous toys and games, and play-based activities** in **Government Schools' pre-primary sections**.

Union Education Minister Dharmendra Pradhan announced the scheme, saying it will provide access to **quality education in an equitable and inclusive classroom environment**.

Samagra Shiksha is a comprehensive school education programme that runs from **pre-school to class 12**. It was created with the overarching goal of improving school **effectiveness as measured by equal access to education and equitable learning outcomes**.

It incorporates the **three schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Teacher Education into one (TE)**.

Since the implementation of the National Education Policy (NEP) 2020 is underway, the Samagra Shiksha 2.0 scheme will also take new paths.

According to the **cabinet committee on economic affairs (CCEA)**, all **child-centric interventions will be provided directly to students over time through DBT mode (Direct Benefit Transfer) on an IT-based platform** in order to improve the scheme's direct outreach.

Furthermore, the existing infrastructure of **schools, ITIs, and Polytechnics** will be used to ensure that the facilities are utilised optimally, **not only for school-age children but also for out-of-school children**.

NIPUN Bharat, a new scheme, has been launched. This is a **National Mission on Foundational Literacy and Numeracy** that aims to ensure that every child achieves the desired learning competencies in reading, writing, and numeracy by the end of third grade and no later than fifth grade.

Teaching Learning Materials (TLM) of up to Rs 500 per child per year, Rs 150 per teacher for teacher manuals and resources, and Rs 10-20 lakh per district for assessment are available.

For **out-of-school children aged 16 to 19**, the scheme will provide **Rs 2,000 per child for SC, ST, and disabled children**. This is in order for them to complete their **secondary/senior secondary levels via NIOS/SOS**.

The Major interventions proposed under the scheme are includes:

- Universal Access to Education including Infrastructure Development and Retention
- Foundational Literacy and Numeracy
- Gender and Equity
- Quality and Innovation
- Financial support for Teachers' Salary
- Digital initiatives
- Vocational Education
- Sports and Physical Education
- Strengthening of Teacher Education and Training

Major Objectives of the scheme:

- 1. Implementing the recommendations of the National Education Policy 2020**
- 2. Implementation of Right of Children to Free and Compulsory Education (RTE) Act, 2009**
- 3. Early Childhood Care and Education**
- 4. Emphasis on Foundational Literacy and Numeracy**
- 5. Emphasis on activity-based Curriculum and Pedagogy to impart 21st-century skills to the students**
- 6. Bridging Social and Gender Gaps in School Education**
- 7. Strengthening and up-gradation of State Councils for Educational Research and Training (SCERTs)/State Institutes of Education and District Institutes for Education and Training (DIET) as the nodal agency for teacher training**
- 8. Ensuring a safe, secure and conducive learning environment and maintenance of standards in schooling provisions**

समग्र शिक्षा योजना 2.0 समग्र शिक्षा योजना का एक नया संस्करण है।

यह योजना 1 अप्रैल, 2021 से 31 मार्च, 2026 तक प्रभावी रहेगी। इस अवधि के लिए 2.94 लाख करोड़ रुपये के बजट को मंजूरी दी गई है।

इस योजना में 1.16 मिलियन स्कूल, 156 मिलियन से अधिक छात्र, और 5.7 मिलियन शिक्षक पूर्व-प्राथमिक से वरिष्ठ माध्यमिक स्तर के सरकारी और सहायता प्राप्त स्कूलों में शामिल हैं।

यह योजना सरकारी स्कूलों के पूर्व-प्राथमिक वर्गों में शिक्षण सामग्री (टीएलएम), स्वदेशी खिलौने और खेल, और खेल-आधारित गतिविधियों के लिए प्रति वर्ष 500 रुपये तक प्रदान करती है।

केंद्रीय शिक्षा मंत्री धर्मेन्द्र प्रधान ने इस योजना की घोषणा करते हुए कहा कि यह एक समान और समावेशी कक्षा के माहौल में गुणवत्तापूर्ण शिक्षा तक पहुंच प्रदान करेगी।

समग्र शिक्षा एक व्यापक स्कूली शिक्षा कार्यक्रम है जो पूर्व-विद्यालय से कक्षा 12 तक चलता है। इसे शिक्षा की समान पहुंच और समान सीखने के परिणामों द्वारा मापा गया स्कूल प्रभावशीलता में सुधार के व्यापक लक्ष्य के साथ बनाया गया था।

इसमें सर्व शिक्षा अभियान (एसएसए), राष्ट्रीय माध्यमिक शिक्षा अभियान (आरएमएसए), और शिक्षक शिक्षा की तीन योजनाओं को एक (टीई) में शामिल किया गया है।

चूंकि राष्ट्रीय शिक्षा नीति (एनईपी) 2020 का कार्यान्वयन चल रहा है, समग्र शिक्षा 2.0 योजना भी नए रास्ते अपनाएगी।

आर्थिक मामलों की कैबिनेट कमेटी (सीसीईए) के अनुसार, योजना की सीधी पहुंच में सुधार के लिए आईटी आधारित प्लेटफॉर्म पर डीबीटी मोड के माध्यम से समय के साथ सभी बाल-केंद्रित हस्तक्षेप सीधे छात्रों को प्रदान किए जाएंगे।

इसके अलावा, स्कूलों, आईटीआई और पॉलिटेक्निक के मौजूदा बुनियादी ढांचे का उपयोग यह सुनिश्चित करने के लिए किया जाएगा कि न केवल स्कूली उम्र के बच्चों के लिए बल्कि स्कूल से बाहर के बच्चों के लिए भी सुविधाओं का बेहतर उपयोग किया जाए।

NIPUN भारत, एक नई योजना शुरू की गई है। यह मूलभूत साक्षरता और संख्यात्मकता पर एक राष्ट्रीय मिशन है जिसका उद्देश्य यह सुनिश्चित करना है कि प्रत्येक बच्चा तीसरी कक्षा के अंत तक और बाद में पांचवीं कक्षा के बाद पढ़ने, लिखने और अंकगणित में वांछित सीखने की क्षमता हासिल कर ले।

प्रति बच्चा प्रति वर्ष 500 रुपये तक का टीएलएम, शिक्षक नियमावली और संसाधनों के लिए प्रति शिक्षक 150 रुपये और मूल्यांकन के लिए 10-20 लाख रुपये प्रति जिला उपलब्ध है।

16 से 19 वर्ष की आयु के स्कूल से बाहर के बच्चों के लिए, योजना एससी, एसटी और विकलांग बच्चों के लिए प्रति बच्चा 2,000 रुपये प्रदान करेगी। यह उनके लिए एनआईओएस/एसओएस के माध्यम से अपने माध्यमिक/वरिष्ठ माध्यमिक स्तर को पूरा करने के लिए है।

योजना के तहत प्रस्तावित प्रमुख हस्तक्षेपों में शामिल हैं:

- बुनियादी ढांचे के विकास और प्रतिधारण सहित शिक्षा के लिए सार्वभौमिक पहुंच
- मूलभूत साक्षरता और संख्यात्मकता
- लिंग और समानता
- गुणवत्ता और नवाचार
- शिक्षकों के वेतन के लिए वित्तीय सहायता
- डिजिटल पहल
- व्यावसायिक शिक्षा
- खेल और शारीरिक शिक्षा
- शिक्षक शिक्षा और प्रशिक्षण का सुदृढीकरण

योजना के प्रमुख उद्देश्य:

इस योजना का उद्देश्य सभी को स्कूली शिक्षा तक सार्वभौमिक पहुंच प्रदान करना है, जिसमें राज्यों और केंद्र शासित प्रदेशों को सहायता प्रदान करने के कुछ प्रमुख उद्देश्य शामिल हैं:

1. राष्ट्रीय शिक्षा नीति 2020 की सिफारिशों को लागू करना
2. बच्चों के मुफ्त और अनिवार्य शिक्षा के अधिकार (आरटीई) अधिनियम, 2009 का कार्यान्वयन
3. बचपन की देखभाल और शिक्षा
4. आधारभूत साक्षरता और संख्यात्मकता पर जोर
5. छात्रों को 21वीं सदी के कौशल प्रदान करने के लिए गतिविधि आधारित पाठ्यचर्या और शिक्षाशास्त्र पर जोर
6. स्कूली शिक्षा में सामाजिक और लैंगिक अंतर को पाटना
7. शिक्षक प्रशिक्षण के लिए नोडल एजेंसी के रूप में राज्य शैक्षिक अनुसंधान और प्रशिक्षण परिषद (एससीईआरटी) / राज्य शिक्षा संस्थान और जिला शिक्षा और प्रशिक्षण संस्थान (डीआईईटी) का सुदृढीकरण और उन्नयन
8. एक सुरक्षित, सुरक्षित और अनुकूल शिक्षण वातावरण सुनिश्चित करना और स्कूली शिक्षा के प्रावधानों में मानकों का रखरखाव करना



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PRIME MINISTER
NARENDRA MODI

to launch digital
payment solution

e-RUPI

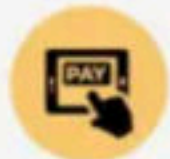
on 2nd August



e-RUPI is a **cashless and contactless** instrument for **digital payment** developed by **National Payments Corporation of India**



Connects sponsors of the services with beneficiaries & service providers in a **digital manner without any physical interface**



Assures timely payment **without involvement of any intermediary.**



It can also be used for **delivering services** meant for **providing drugs & nutritional support under Mother & Child welfare schemes, TB eradication programmes, etc**

**e-RUPI Digital Payment Launched
by PM Modi**

India's own Digital currency

Initiative	e-RUPI Digital Payment
Launched By	Government Of India
Beneficiary	Citizens Of India or anyone having it can redeem Example: Can be used for fertilizer subsidies, Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana etc
Objective	To Provide Cashless And Contactless Instrument For Making Digital Payments
Official Website	https://www.npci.org.in/ National Payments Corporation of India
Year	2021

Everything Nav Learner Need to Know About e-RUPI

- e-RUPI is a cashless and contactless digital payment instrument. It is a **QR code or SMS string-based e-Voucher** that is delivered to the beneficiaries' mobile phones.
- Users of this **one-time payment mechanism** will be able to redeem the voucher at the service provider **without the need for a card, digital payments app, or internet banking access.**
- It was created in **collaboration with the Department of Financial Services, the Ministry of Health and Family Welfare, and the National Health Authority on the National Payments Corporation of India's UPI platform.**
- e-RUPI connects service sponsors with beneficiaries and service providers in a digital manner, with no physical interface. It also ensures that payment is made to the service provider only after the transaction is completed. **Because it is pre-paid, it ensures timely payment to the service provider without the involvement of a third party.**
- It is expected to be a game-changing initiative aimed at ensuring the **delivery of leak-proof welfare services.**
- Not only the **government, but any general organisation or organisation** that wants to help someone in their treatment, education, or any other work **will be able to do so using e-RUPI rather than cash.**

नव लर्नर को e-RUPI के बारे में जानने की जरूरत है सब कुछ

- e-RUPI एक कैशलेस और कॉन्टैक्टलेस डिजिटल पेमेंट इंस्ट्रूमेंट है। यह एक क्यूआर कोड या एसएमएस स्ट्रिंग-आधारित ई-वाउचर है जो लाभार्थियों के मोबाइल फोन पर दिया जाता है।
- इस एकमुश्त भुगतान प्रणाली के उपयोगकर्ता कार्ड, डिजिटल भुगतान ऐप या इंटरनेट बैंकिंग एक्सेस की आवश्यकता के बिना सेवा प्रदाता के वाउचर को भुनाने में सक्षम होंगे।
- इसे भारतीय राष्ट्रीय भुगतान निगम के UPI प्लेटफॉर्म पर वित्तीय सेवा विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय और राष्ट्रीय स्वास्थ्य प्राधिकरण के सहयोग से बनाया गया था।
- ई-आरयूपीआई बिना किसी भौतिक इंटरफेस के डिजिटल तरीके से सेवा प्रायोजकों को लाभार्थियों और सेवा प्रदाताओं से जोड़ता है। यह यह भी सुनिश्चित करता है कि लेन-देन पूरा होने के बाद ही सेवा प्रदाता को भुगतान किया जाए। क्योंकि यह प्री-पेड है, यह किसी तीसरे पक्ष की भागीदारी के बिना सेवा प्रदाता को समय पर भुगतान सुनिश्चित करता है।
- लीक-प्रूफ कल्याण सेवाओं की डिलीवरी सुनिश्चित करने के उद्देश्य से यह एक गेम-चेंजिंग पहल होने की उम्मीद है।
- न केवल सरकार, बल्कि कोई भी सामान्य संगठन या संगठन जो किसी के इलाज, शिक्षा या किसी अन्य काम में मदद करना चाहता है, वह नकद के बजाय ई-आरयूपीआई का उपयोग करके ऐसा कर सकेगा।

The following are the consumer benefits of e-RUPI:

Contactless: The beneficiary does not need to carry a printout of the voucher.

Simple redemption: A two-step redemption procedure

Safe and secure: Because the beneficiary is not required to share personal information during redemption, privacy is maintained.

There is no need for a digital or bank presence: The consumer who redeems the voucher does not need to have a digital payment app or a bank account.

ई-आरयूपीआई के उपभोक्ता लाभ निम्नलिखित हैं:

- संपर्क रहित: लाभार्थी को वाउचर का प्रिंटआउट ले जाने की आवश्यकता नहीं है।
- सरल मोचन: एक दो-चरणीय मोचन प्रक्रिया
- सुरक्षित और सुरक्षित: चूंकि मोचन के दौरान लाभार्थी को व्यक्तिगत जानकारी साझा करने की आवश्यकता नहीं होती है, इसलिए गोपनीयता बनाए रखी जाती है।
- डिजिटल या बैंक उपस्थिति की कोई आवश्यकता नहीं है: वाउचर को भुनाने वाले उपभोक्ता के पास डिजिटल भुगतान ऐप या बैंक खाता होने की आवश्यकता नहीं है।

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The terms 'pyrolysis and plasma gasification' are mentioned in which of the following contexts?

- (a) Rare earth element extraction
- (b) Techniques for extracting natural gas
- (c) Automobiles that run on hydrogen fuel
- (d) Waste-to-energy (WTE) systems

निम्नलिखित में से किसके संदर्भ में पद हैं
'पायरोलिसिस और प्लाज्मा गैसीकरण' का उल्लेख है?

- (ए) दुर्लभ पृथ्वी तत्वों का निष्कर्षण
- (बी) प्राकृतिक गैस निष्कर्षण प्रौद्योगिकियां
- (सी) हाइड्रोजन ईंधन आधारित ऑटोमोबाइल
- (डी) अपशिष्ट से ऊर्जा प्रौद्योगिकियां

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- (डी) अपशिष्ट से ऊर्जा प्रौद्योगिकियां

PAG is a waste-treatment method that uses a mix of electricity and high temperatures to convert municipal waste (garbage or trash) into useable by-products without the use of combustion (burning).

Which of the following claims concerning methane hydrate deposits is true?

1. The release of methane gas from these deposits could be triggered by global warming.
2. In the Arctic Tundra and beneath the seafloor, large deposits of 'methane hydrate' can be found.
3. After a decade or two, methane in the atmosphere oxidises to carbon dioxide.

Using the code provided below, select the correct answer.

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

मीथेन हाइड्रेट जमा के संबंध में निम्नलिखित में से कौन सा दावा सही है?

1. इन जमाओं से मीथेन गैस का उत्सर्जन ग्लोबल वार्मिंग के कारण हो सकता है।
2. आर्कटिक टुंड्रा और समुद्र तल के नीचे 'मीथेन हाइड्रेट' के बड़े भंडार पाए जा सकते हैं।
3. एक या दो दशक के बाद, वातावरण में मीथेन कार्बन डाइऑक्साइड में ऑक्सीकृत हो जाती है।

नीचे दिए गए कूट का प्रयोग कर सही उत्तर का चयन करें।

- (ए) केवल 1 और 2
- (बी) केवल 2 और 3
- (सी) केवल 1 और 3
- (डी) 1, 2 और 3

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मीथेन हाइड्रेट जमा के संबंध में निम्नलिखित में से कौन सा दावा सही है?

1. इन जमाओं से मीथेन गैस का उत्सर्जन ग्लोबल वार्मिंग के कारण हो सकता है।
2. आर्कटिक टुंड्रा और समुद्र तल के नीचे 'मीथेन हाइड्रेट' के बड़े भंडार पाए जा सकते हैं।
3. एक या दो दशक के बाद, वातावरण में मीथेन कार्बन डाइऑक्साइड में ऑक्सीकृत हो जाती है।

नीचे दिए गए कूट का प्रयोग कर सही उत्तर का चयन करें।

- (ए) केवल 1 और 2
- (बी) केवल 2 और 3
- (सी) केवल 1 और 3
- (डी) 1, 2 और 3

Only certain physical, chemical, and geological conditions allow methane hydrates to form. The optimal conditions are high water pressures and cold temperatures. Methane Hydrate deposits can be hundreds of metres thick and can be found in two places: beneath Arctic permafrost and beneath the ocean floor. As a result of global warming, the temperature has risen, destabilising the methane hydrates and allowing methane to escape. Methane has a short lifetime in the atmosphere; within a decade or two, a molecule of methane is oxidised to water and carbon dioxide, primarily by interaction with another trace gas, the hydroxyl radical OH-.

केवल कुछ भौतिक, रासायनिक और भूवैज्ञानिक स्थितियां ही मीथेन हाइड्रेट्स को बनने देती हैं। इष्टतम स्थितियां उच्च पानी के दबाव और ठंडे तापमान हैं। मीथेन हाइड्रेट जमा सैकड़ों मीटर मोटी हो सकती है और इसे दो स्थानों पर पाया जा सकता है: आर्कटिक पर्माफ्रॉस्ट के नीचे और समुद्र तल के नीचे। ग्लोबल वार्मिंग के परिणामस्वरूप, तापमान बढ़ गया है, मीथेन हाइड्रेट्स को अस्थिर कर रहा है और मीथेन को बाहर निकलने की इजाजत दे रहा है। वातावरण में मीथेन का जीवनकाल छोटा होता है; एक या दो दशक के भीतर, मीथेन का एक अणु पानी और कार्बन डाइऑक्साइड में ऑक्सीकृत हो जाता है, मुख्य रूप से एक अन्य ट्रेस गैस, हाइड्रॉक्सिल रेडिकल OH- के साथ बातचीत करके।

Consider the following propositions:

1. The Ramsar Convention requires the Indian government to safeguard and conserve all wetlands within its borders.
2. The Wetlands (Conservation and Management) Rules, 2010, were drafted by the Indian government in response to the Ramsar Convention's recommendations.
3. The Wetlands (Conservation and Management) Rules, 2010 also cover the authority's determination of the wetlands' drainage area or catchment areas.

Which of the following assertions is/are correct?

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

निम्नलिखित प्रस्तावों पर विचार करें:

1. रामसर कन्वेंशन के लिए भारत सरकार को अपनी सीमाओं के भीतर सभी आर्द्रभूमियों की सुरक्षा और संरक्षण की आवश्यकता है।
2. आर्द्रभूमि (संरक्षण और प्रबंधन) नियम, 2010, रामसर कन्वेंशन की सिफारिशों के जवाब में भारत सरकार द्वारा तैयार किए गए थे।
3. आर्द्रभूमि (संरक्षण और प्रबंधन) नियम, 2010 में प्राधिकरण द्वारा आर्द्रभूमि के जल निकासी क्षेत्र या जलग्रहण क्षेत्रों के निर्धारण को भी शामिल किया गया है।

निम्नलिखित में से कौन सा/से कथन सही है/हैं?

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निम्नलिखित में से कौन सा/से कथन सही है/हैं?

The Ramsar Convention is an intergovernmental convention that establishes a framework for national and international action to conserve and wisely utilise wetlands and their resources. The Contracting Parties agree to work toward the wise use of all their wetlands under the Convention's three pillars: designate suitable wetlands for the Ramsar List and ensure their effective management; and cooperate internationally on transboundary wetlands, shared wetland systems, and shared species. As a result, it does not refer to all wetlands on a country's territory. The convention took effect in India on February 1, 1982.

रामसर कन्वेंशन एक अंतर सरकारी सम्मेलन है जो आर्द्रभूमि और उनके संसाधनों के संरक्षण और बुद्धिमानी से उपयोग करने के लिए राष्ट्रीय और अंतर्राष्ट्रीय कार्रवाई के लिए एक रूपरेखा स्थापित करता है। अनुबंध करने वाले पक्ष कन्वेंशन के तीन स्तंभों के तहत अपने सभी आर्द्रभूमि के बुद्धिमान उपयोग की दिशा में काम करने के लिए सहमत हैं: रामसर सूची के लिए उपयुक्त आर्द्रभूमि नामित करें और उनका प्रभावी प्रबंधन सुनिश्चित करें; और ट्रांसबाउंड्री वेटलैंड्स, साझा वेटलैंड सिस्टम और साझा प्रजातियों पर अंतरराष्ट्रीय स्तर पर सहयोग करते हैं। नतीजतन, यह किसी देश के क्षेत्र में सभी आर्द्रभूमियों को संदर्भित नहीं करता है। यह सम्मेलन 1 फरवरी, 1982 को भारत में प्रभावी हुआ।

In our country, there has recently been a growing awareness of the relevance of Himalayan nettle (*Girardinia diversifolia*) because it has been discovered to be a sustainable source of nutrition.

- (a) anti-malarial drug
- (b) textile fibre
- (c) biodiesel
- (d) pulp of paper industry

हमारे देश में, हाल ही में हिमालयन बिछुआ (गिरार्डिनिया डायवर्सिफोलिया) की प्रासंगिकता के बारे में जागरूकता बढ़ी है क्योंकि इसे पोषण का एक स्थायी स्रोत के रूप में खोजा गया है।

- (ए) मलेरिया-रोधी दवा
- (बी) कपड़ा फाइबर
- (सी) बायोडीजल
- (डी) कागज उद्योग का लुगदी

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- (डी) कागज उद्योग का लुगदी



The Himalayan Nettle, or *Girardinia diversifolia*, is a fiber-producing plant found in the Himalayan mountain range. This plant is most commonly found in alpine and mountainous areas above 3000 metres above sea level. Himalayan Nettle grows profusely in the forest, along riverbanks, and in damp environments.

For individuals living in the Himalayan mountain area, this fiber-producing plant has become a good source of income. As a result, this plant has a commercial value. The Government of India is funding research and development for Himalayan Indian Nettle. This fibre is recyclable and biodegradable. As a result of these characteristics, this fibre is environmentally beneficial. The Government of India is pushing its textile and commercial uses in order to increase output.

For their livelihood, several Himalayan people produce fabric from Himalayan Nettle. Because this fabric and the products made from it are in high demand both locally and internationally.

Consider the following propositions: The Environment Protection Act of 1986 gives the Indian government the authority to protect the environment.

1. State the demand for public participation in the environmental protection process, as well as the approach and method for obtaining it.
2. establish criteria for the emission or discharge of contaminants into the environment from various sources.

Which of the following assertions is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

निम्नलिखित प्रस्तावों पर विचार करें: 1986 का पर्यावरण संरक्षण अधिनियम भारत सरकार को पर्यावरण की रक्षा करने का अधिकार देता है।

1. पर्यावरण संरक्षण प्रक्रिया में जनभागीदारी की मांग के साथ-साथ इसे प्राप्त करने का तरीका और तरीका बताएं।
2. विभिन्न स्रोतों से पर्यावरण में प्रदूषकों के उत्सर्जन या निर्वहन के लिए मानदंड स्थापित करें।

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Environment Protection Act of 1986 is to allow citizens to participate in decision-making, which helps society achieve its aim of sustainable and environmentally sound growth. Participation of the public in environmental decision-making, particularly in EIA, has several advantages in these procedures. The decision-making process, up to and including the final decision, becomes more transparent and genuine as a result of public participation. This legislation gives the Union government the authority to take all necessary steps to prevent and regulate pollution, as well as to set up effective equipment to safeguard and improve the environment's quality. It also establishes criteria for the emission or discharge of contaminants into the environment from various sources. As a result, both assertions are true.

1986 का पर्यावरण संरक्षण अधिनियम नागरिकों को निर्णय लेने में भाग लेने की अनुमति देता है, जो समाज को स्थायी और पर्यावरणीय रूप से ध्वनि विकास के अपने लक्ष्य को प्राप्त करने में मदद करता है। पर्यावरणीय निर्णय लेने में जनता की भागीदारी, विशेष रूप से ईआईए में, इन प्रक्रियाओं में कई फायदे हैं। निर्णय लेने की प्रक्रिया, अंतिम निर्णय तक और सार्वजनिक भागीदारी के परिणामस्वरूप अधिक पारदर्शी और वास्तविक हो जाती है। यह कानून केंद्र सरकार को प्रदूषण को रोकने और नियंत्रित करने के लिए सभी आवश्यक कदम उठाने के साथ-साथ पर्यावरण की गुणवत्ता की सुरक्षा और सुधार के लिए प्रभावी उपकरण स्थापित करने का अधिकार देता है। यह विभिन्न स्रोतों से पर्यावरण में प्रदूषकों के उत्सर्जन या निर्वहन के लिए मानदंड भी स्थापित करता है। परिणामस्वरूप, दोनों कथन सत्य हैं।

The BioCarbon Fund Initiative for Sustainable Forest Landscapes is overseen by which of following

- (a) World Bank
- (b) International Monetary Fund
- (c) United Nations Environment Programme
- (d) Asian Development Bank

सतत वन परिदृश्य के लिए बायोकार्बन फंड पहल की देखरेख निम्नलिखित में से किसके द्वारा की जाती है

- (ए) विश्व बैंक
- (बी) अंतर्राष्ट्रीय मुद्रा कोष
- (सी) संयुक्त राष्ट्र पर्यावरण कार्यक्रम
- (डी) एशियाई विकास बैंक

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- (डी) एशियाई विकास बैंक

The BioCarbon Fund ISFL is a global initiative managed by the World Bank and sponsored by donor nations.

The BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) is a multilateral facility that promotes and rewards better land management, such as REDD+ (Reduced Emissions from Deforestation and Forest Degradation), climate smart agriculture, and smarter land use planning and policies, in order to reduce greenhouse gas emissions and increase sequestration. The ISFL will test techniques and share lessons learned by piloting programmes and interventions at a jurisdictional level.

In 2013, the BioCarbon Fund launched the Initiative for Sustainable Forest Landscapes. Germany, Norway, Switzerland, the United Kingdom (Department for Business, Energy and Industrial Strategy and Department for Environment, Food and Rural Affairs), and the United States all support the Initiative. It sponsors initiatives in Colombia, Ethiopia, Indonesia, Mexico, and Zambia with \$355 million in fund money.

बायोकार्बन फंड आईएसएफएल विश्व बैंक द्वारा प्रबंधित और दाता देशों द्वारा प्रायोजित एक वैश्विक पहल है।

बायोकार्बन फंड इनिशिएटिव फॉर सस्टेनेबल फॉरेस्ट लैंडस्केप्स (ISFL) एक बहुपक्षीय सुविधा है जो बेहतर भूमि प्रबंधन को बढ़ावा देती है और पुरस्कृत करती है, जैसे REDD+ (वनों की कटाई और वन क्षरण से कम उत्सर्जन), जलवायु स्मार्ट कृषि, और स्मार्ट भूमि उपयोग योजना और नीतियां, क्रम में ग्रीनहाउस गैस उत्सर्जन को कम करने और जब्ती बढ़ाने के लिए। ISFL तकनीकों का परीक्षण करेगा और एक अधिकार क्षेत्र के स्तर पर पायलटिंग कार्यक्रमों और हस्तक्षेपों से सीखे गए पाठों को साझा करेगा।

2013 में, बायोकार्बन फंड ने सतत वन परिदृश्य के लिए पहल शुरू की। जर्मनी, नॉर्वे, स्विट्ज़रलैंड, यूनाइटेड किंगडम (व्यापार, ऊर्जा और औद्योगिक रणनीति विभाग और पर्यावरण, खाद्य और ग्रामीण मामलों के विभाग), और संयुक्त राज्य अमेरिका सभी पहल का समर्थन करते हैं। यह कोलंबिया, इथियोपिया, इंडोनेशिया, मैक्सिको और जाम्बिया में 355 मिलियन डॉलर के फंड मनी के साथ पहल करता है।



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DREAM, BELIEVE, ACT, ACHIEVE

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Make it realistic

Write down Your Goal JRF with 5 Point Reason

- > Why
- > For whom
- > How Important
- > Why only this most admirable
- > How much effort You can do to get JRF



Make it realistic

Write down Your Goal JRF with 5 Point Reason

- > Why
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- > Why only this most admirable
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Why laziness comes

- > Just bcz ...
- > Am i Preparing in correct Way
- > What Habit i have to Change

When i will start focusing and be mature to get JRF

Hey Let's Start For JRF Now !!

Way to JRF



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Target: 100 Percentile AIR- 1

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COMMERCE 17 October 2020

1st Shift PYQ with Official

Answer Keys, Explanation



JRF is Mine

इस बार JRF लेकर ही रहेंगे

International Yoga Day 2021

Theme 2021

**" Yoga for
Well-Being "**



सक्सेस की सबसे
बड़ी खास बात यह है कि
वह मेहनत करने वालों पर
फिदा हो जाती है!!

शिक्षा वो शेरनी का दूध है जो
इसे पियेगा वो शेर की तरह
दहाड़ेगा- Dr. B.R.
Ambedkar

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A computer cannot boot if it does not have which of the following?

- [A] Compiler
- [B] Loader
- [C] Operating System
- [D] Assembler

एक कंप्यूटर बूट नहीं कर सकता यदि उसमें निम्न में से क्या नहीं है?

- [ए] संकलक
- [बी] लोडर
- [सी] ऑपरेटिंग सिस्टम
- [डी] असेंबलर

An operating system is the most important software that runs on a computer. It manages the computer's memory and processes, as well as all of its software and hardware.



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Structured Assessment And Analysis



Reduce Roadblocks



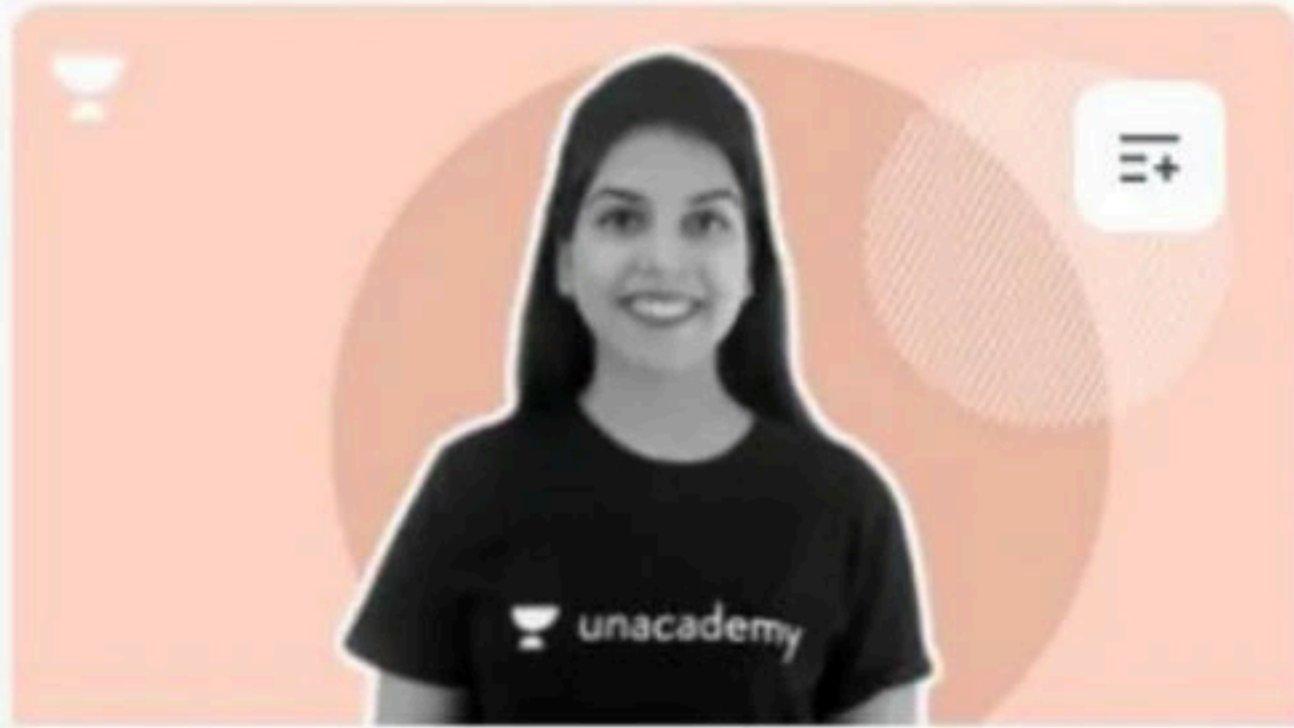
Clear Roadmap For Preparation



Help Establish Command Over Core Subjects

Code:

NAVCLASSES

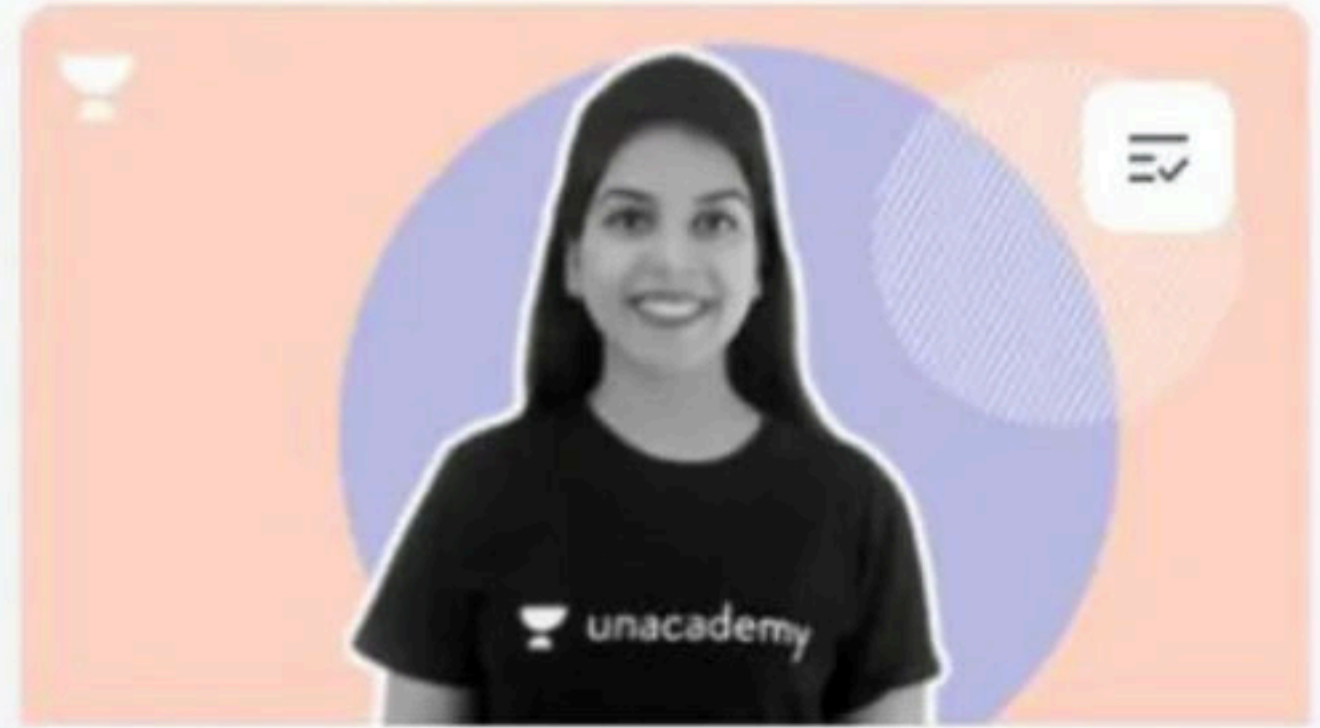


HINDI **GENERAL PAPER ON TEACHING**

Rank Booster Course on Paper 1
through MCQs

Starts on May 26, 2021 • 5 lessons

Navdeep Kaur



HINDI **COMMERCE**

Course on Commerce (Unit I, II, III &
V)

Starts on May 12, 2021 • 33 lessons

Navdeep Kaur

Code:
NAVCLASSES

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Unacademy - Accelerate Scholarship Test

Schedule

Feb 21 - May 30 • 14 tests

MAY
9 Scholarship Mock 10 | Computer Science
Test 11 • 4:00 PM

MAY
16 Scholarship Mock 11 | Sociology
Test 12 • 4:00 PM

MAY
23 Scholarship Mock 12 | Commerce
Test 13 • 4:00 PM

MAY
30 Scholarship Mock 13 | Paper 1
Test 14 • 4:00 PM

Code:
NAVCLASSES

JRF

Advance Expected MCQs Course on Paper 1- Way to JRF

Discussion Forum

Week 1

Mar 29 - Apr 4 • 1 lesson, 2 quizzes

Code:
NAVCLASSES

APR
2
Expected MCQs Quiz on Teaching Aptitude
Quiz 1 • 7:30 PM

Create quiz

APR
3
Analysis of Expected MCQs Quiz on Teaching Aptitude
Lesson 1 • 5:00 PM

APR
4
Expected MCQs Quiz on Research Aptitude
Quiz 2 • 7:30 PM

Create quiz



Course on Commerce Paper II through MCQs (Way to JRF)

Discussion Forum

Week 1

Apr 5 - 11 • 1 lesson

APR
10
Expected MCQs Quiz on Unit I BE & IB
Lesson 1 • 2:00 PM



Week 2

Apr 12 - 18 • 1 lesson

APR
16
Expected MCQs Quiz on Unit II Accounting
Lesson 2 • 2:00 PM

