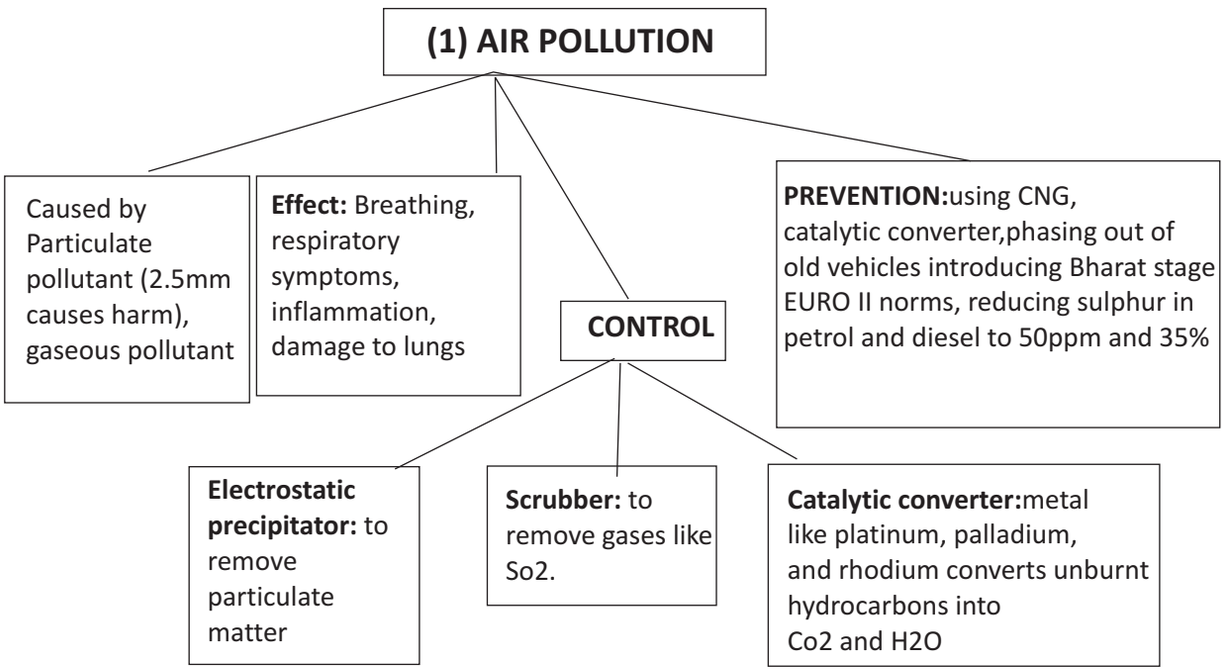
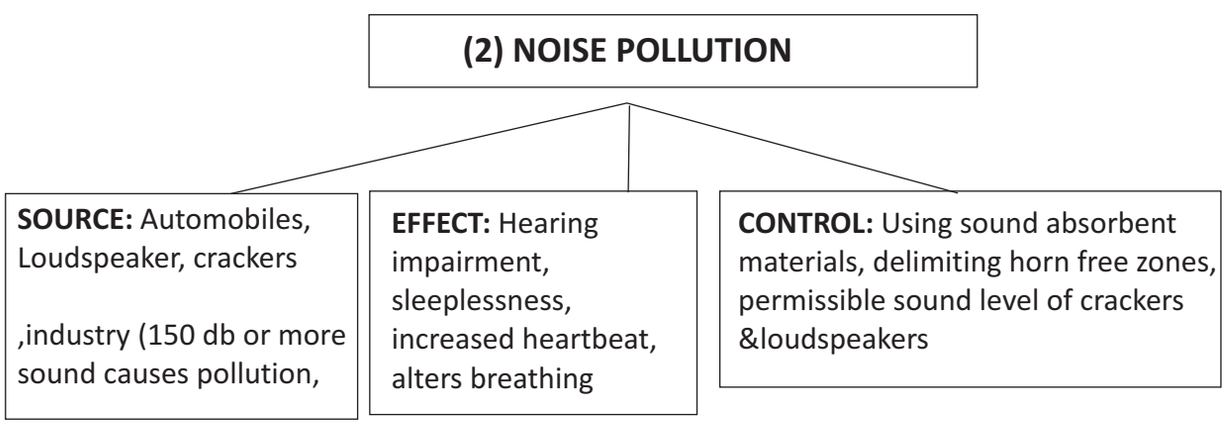
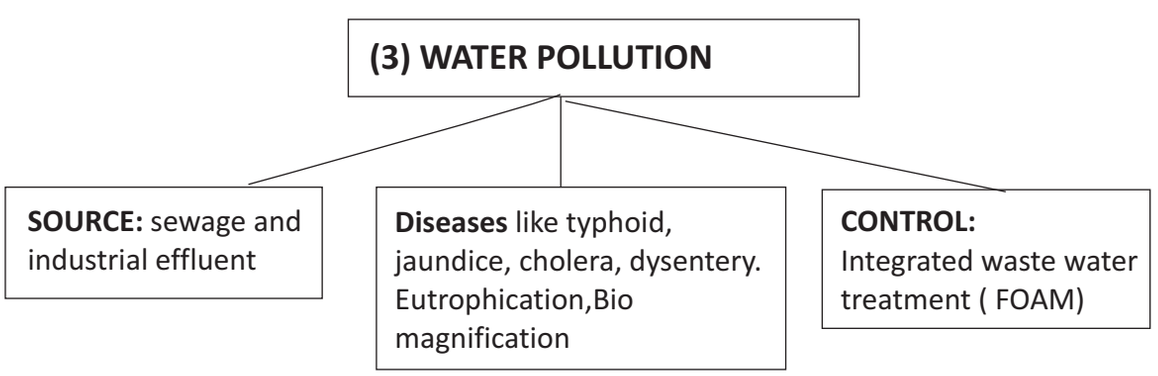
CHAPTER:16 ENVIRONMENTAL ISSUES
(KEY POINTS)

S.No	Term	Explanation
1	DU	Dobson unit
2	CPCB	Central Pollution Control Board
3	BOD	Biological Oxygen Demand
4	CNG	Compressed Natural Gas
5	FOAM	Friends of Arcata Marsh
6	JFM	Joint Forest Management
7	PIL	Public interest litigation
8	CPCB	Central pollution control board
9	Air prevention & control	1981 Protect & control of air pollution act
10	Environmental(protection)	1986 Protect & control the quality of environment act
11	Water (prevention & control of pollution)act	1974 Protect & control of water pollution to safe guard water resources
12	Chipkho movement	1974 protection of forest
13	Montreal protocol	1989 Control on emission of ozone depleting substances
14	Pollution	Undesirable changes in physical/chemical/biological characteristics of air/water/land
15	Pollutants	Agents which cause pollution
16	Slash and Burn Agriculture (Jhum Cultivation	Cutting down trees and burn the plant remains. Ash is used as a fertiliser and the land is then used for farming or cattle grazing.
17	Algal Bloom	excessive growth of algae due to presence of nutrient in water
18	Plankton	Free floating aquatic organisms.
19	Bio magnification	increase in concentration of toxic substances at successive trophic levels.
20	Eutrophication	Natural aging of lake by nutrient enrichment
21	Snow blindness	Inflammation of cornea due to high dose of UV-B radiation

CHAPTER:16 ENVIRONMENTAL ISSUES
(FLOW CHART)







(4) SOLID WASTES

SOURCE: Municipal wastes, hospital wastes, electronic wastes,pesticides, weedicides,human excreta

EFFECT: causes diseases, soil pollution, kills beneficial insects & microbes

CONTROL: recycling, reuse, incineration, used for land filling, preparing

(5) RADIOACTIVE WASTES

SOURCE: Nuclear energy used for generating electricity

Radiation emitted cause mutations ,genetic disordersin organisms

CONTROL: Storing in a shielded container after sufficient treatment &buried within the sea bottom or rocks about 500m deep below the earth surface.

(6) GREEN HOUSE EFFECT & GLOBAL WARMING

CAUSE: Gases like CO2, methane, CFC,N2O
Absorbs solar radiation & increase the atmospheric

ELNino effect—melting of polar ice caps, results in rise in sea level & submerges of coastal areas.

EFFECT: Reducing the emission of greenhouse gases, planting more trees, increasing efficiency of energy usage.

(7) OZONE DEPLETION

SOURCE: CFC released from refrigerator, AC, jetaeroplane degrades the ozone

Effect: UV rays act on CFCs & release Cl- atoms which act as a catalyst & degrade ozone.Causes cataract, damage to DNA, aging of skin, skin cancer
UV –B casus snow blindness & inflammation of cornea.

CONTROL: preventing emission of CFC

(8) SOIL EROSION

CAUSE: Over cultivation,unrestricted grazing,Deforestation,Irrigation without proper drainage of

EFFECT: decreases soil fertility. water logging affect crops & draws salt to the surface of soil.

CONTROL: Planting more trees

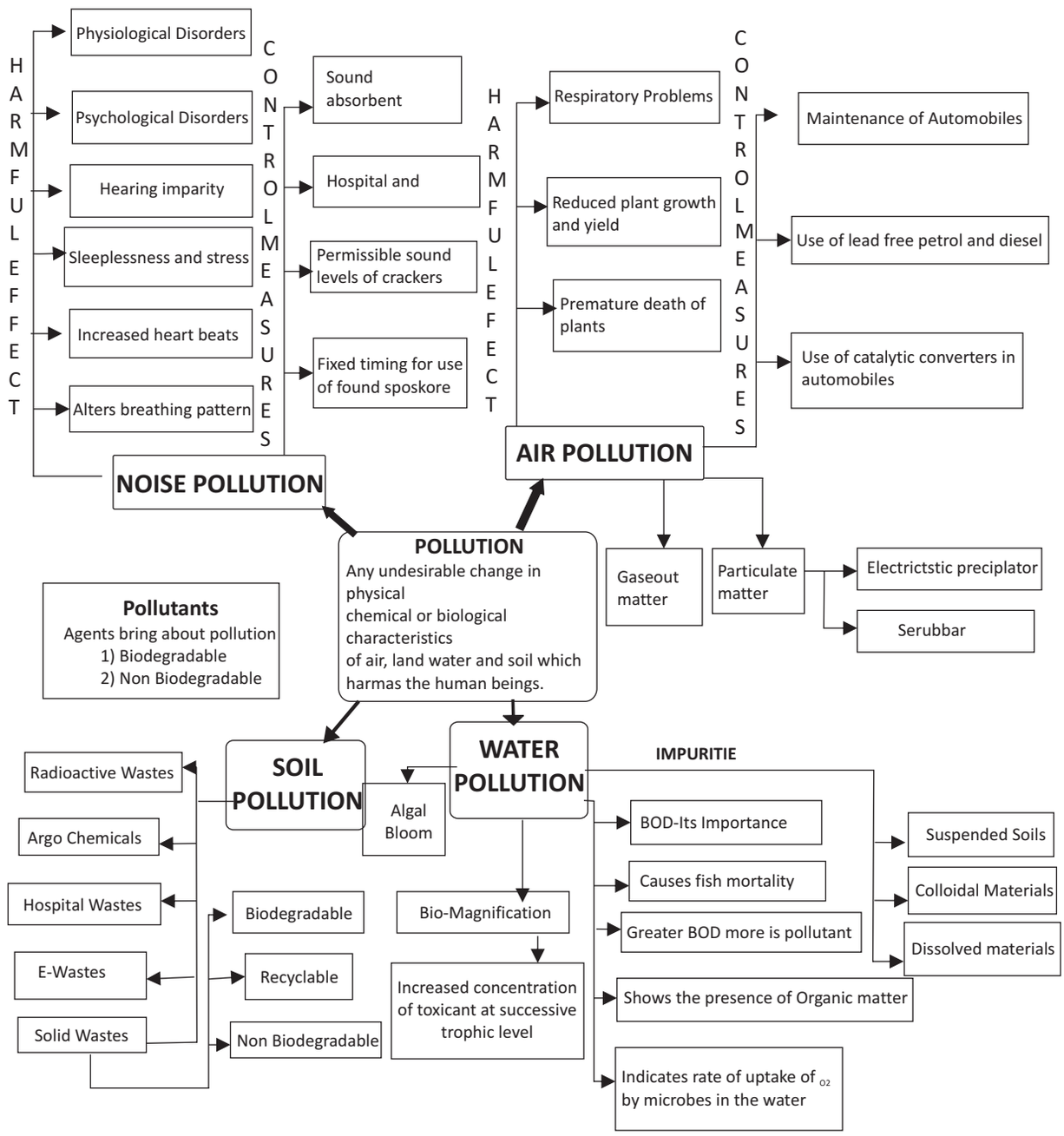
(9) DEFORESTATION

CAUSE: Cutting trees for timber, fire wood
Convertion of forest to agricultural land.
Slash & burn agriculture./jhum

EFFECT: global warming due to excess carbon-dioxide
Loss of biodiversity
Damage to hydrological cycle
Leads to soil erosion
Desertification of land

CONTROL: Reforestation.

CHAPTER:16 ENVIRONMENTAL ISSUES
(CONCEPT MAP)



CHAPTER:16 ENVIRONMENTAL ISSUES
(QUESTION BANK)

1. Why should the velocity of air between the plates of an electrostatic precipitator be low?
2. PM2.5 is responsible for causing greatest harm to human health. What is it? How is it harmful?
3. What is the noise level that can cause permanent impairment of hearing ability of human beings?
4. Why was the Montreal Protocol signed?
5. Jhum cultivation has been in practice from earlier days, but its considered more problematic these days. Why?
6. A radiation causes ageing of skin, skin cancer, and inflammation of cornea called snow blindness. It also damages DNA. Name the radiation.
7. Landfills are not much a solution for getting rid of solid wastes. Why?
8. Electrostatic precipitator can remove over 99% particulate matter present in exhaust from a thermal power plant. How?
9. Why is a scrubber used? Which spray is used on exhaust gases passing through a scrubber?
10. There is a sharp decline in dissolved oxygen downstream from the point of sewage discharge. Why? What are its adverse effects?
11. Catalytic converters use expensive metals as catalysts.

    (a) Name the metals generally used.

    (b) What precaution should be observed while using catalytic converter?
12. What are e-wastes? Why are they creating more problems in developing countries in comparison to developed countries?
13. Water logging and salinity are some of the problems that have come in the wake of Green revolution. How does water logging create problems of salinity?
14. What is the relationship between BOD, micro-organisms and amount of biodegradable matter?
15. Deforestation is creating a lot of problems in the environment. List the consequences of deforestation.
16. Enlist four harmful effects caused to the humans living in areas having polluted air. Suggest two measures to reduce air pollution.
17. People have been actively participating in the efforts for the conservation of forests.

    (i) Name the award instituted in respect of Amrita Devi to promote such fforts.

    (ii) Name the movement launched to protect the trees by hugging them.

    (iii) Name the step Government of India has undertaken in 1980.s to work closely with the local communities for protecting and managing forests.
18. Pollutant released due to human activities (like effluents from industries and homes) can radically accelerate the ageing process of the water body.

    (a) Explain how does this process occurs during natural ageing of lake.

    (b) Give the term used for accelerated ageing of water bodies. Also give the term used for the natural ageing of lake.

19. In Arcata, the town's people have created an integrated waste water treatment process within a natural system. A citizen group called FOAM helps in upkeep of this project.

(a) What are the main steps in waste water management done in this way?

(b) .Ecosan. in Kerala and Sri Lanka is also an initiative for water conservation. How?

20. What are the contribution of Ahmed Khan in Bangalore and Ramesh Chandra Dagar in Sonipat?

21. Since the use of polybags has become so rampant in our day to day life, it is impossible to go back to non-plastic era. Today, the plastic menace has spread from cities to small towns and village. They are "Garbage Forever".

i) What are the harmful effects of using polybags?

ii) In your opinion, what steps should be taken to solve this problem?

22. Nowadays, we see that people use CDs & DVDs for storing information, movies and songs.

i) Do you think these things create pollution?

ii) Which values are expressed, on the basis of information?

CHAPTER:16 ENVIRONMENTAL ISSUES
(ANSWER KEY)

S.no	Value point	Marks
1	To allow the dust to fall.	1
2	PM2.5 stands for particulate matter of size 2.5 micrometres or less in diameter. It's responsible for causing greatest harm to human health as it can be inhaled deep into lungs and cause breathing problems.	1m
3	150 dB or more	1m
4	To control emission of ozone depleting substances	1m
5	Enough time gap is not being given for the natural process of recovery of land from the effect of cultivation	1m
6	Ultraviolet B rays (UV-B rays)	1m
7	Landfill sites are getting filled very fast due to large amount of garbage generation. Also underground water resources may get polluted due to seepage of chemicals	1+1=2m
8	Electrode wire at thousand volts, produce corona to release electrons,electrons attach to dust particules giving them net negative charge, charged dust particules attracted/collected by collecting plates which are grounded	1+1=2m
9	To remove gases like sulphur dioxide. Spray of water or lime is used	1+1=2m
10	Following discharge of sewage into river, micro organisms involved in biodegradation of organic matter present in sewage consume more oxygen. This cause mortality of fish and other aquatic creature	

11	(a) Catalysts : platinum - palladium and Rhodium (b) Motor vehicles equipped with catalytic converters should use unleaded petrol as lead inactivates the catalysts.	1+1=2m
12	a) Irrepairable computers and other electronic wastes. (b) Recycling in developing countries involves manual participation thus exposing workers to toxic substances. In developed countries its mechanised so less dangerous	1+1=2m
13	Water logging draws salt to surface of soil. Salt deposited on land surface as a thin crust or at the roots of the plants	2m
14	Increase in amount of biodegradable matter leads to rapid multiplication of micro organisms to degrade it, thereby increasing BOD level of the water body.	2m
15	Enhanced CO2 concentration in atmosphere, Loss of biodiversity ,Soil erosion Desertification ,Disturbed hydrological cycles.	3×1=3m
16	.Breathing problems, irritation and inflammation, Damage to lungs, Premature death. Reduce emission from automobile exhaust , Growing more trees	6×1/2=3m
17	(i) Amrita Devi Bishnoi Wildlife Protection Award. (ii) Chipko movement (iii) Joint Forest Management (JFM).	1+1+1=3m
18	a) The phenomeon is eutrophication. More nutrients in water, aquatic life increases organic remains deposited on lake bottom, lake grows shallower and warmer, gradually transforms into land due to deposition of silt and organic debris. (b) Cultural or Accelerated eutrophication ,Natural ageing is Eutrophication	1+2+3=5
19	a) Conventional sedimentation, filtering and chlorine treatment. Absorption and assimilation of pollutants by algae fungi and bacteria. (b) .Ecosan. derived from ecological sanitation. Handling human excreta using dry composting toilets. Its practical, hygienic and cost effective method.	2+3=5
20	a)Polyblend ,a fine powder of recycled modified plastic is mixed with bitumen & used to lay roads. This increases bitumen water repellent properties & increase road life by a factor of three b) Integrated organic farming is a cyclical, zero waste procedure, where waste from process are cycled in as nutrients for other process. He included bee keeping, dairy management, water harvesting composting and agriculture in s chain of processes.	2+2=4
21	(I) Non degradable, choke our sewage & drainage system, stray cattle eats it & choke its digestive system (II) Using paper,jute,cloth bags. Minimise the use voluntarily. Segregation of biodegradable & non-biodegradable material to safe disposal. Educating people on health risk, production of biodegradable plastic bags by mixing cellulose during their manufacturing.	2+2=4
22	Yes, these contain heavy metals & toxic substances. As the technology is changing these products are replaced by i pods, pen drives. They constitute e-waste.	1+1+2=4