

QUESTION 8 A AGENDA 21

1. A Introduction

Agenda 21 was adopted after Rio Convention. It is a goal of 21 century that needs to be met before 21 century ends. Agenda 21 was had 4 sections. Identification of socio-economic problems, environment problems, engaging stakeholders and also highlights implementation of section derived from the problem identified.

Read the question carefully and address exactly what is asked, avoiding unnecessary deviation.

Start with a clear and relevant introduction that shows understanding of the topic.

Structure the answer logically: introduction, explanation/analysis, and a brief conclusion.

Use correct scientific terminology (e.g., biodiversity, sustainability, carbon cycle, eutrophication).

Explain concepts clearly and accurately, avoiding vague or generalized statements.

Support answers with relevant examples, preferably from Pakistan or global case studies where appropriate.

Include data, statistics, or facts (e.g., temperature rise, deforestation rates) when relevant to strengthen arguments.

Incorporate environmental laws, agreements, or protocols (e.g., Paris Agreement, Kyoto Protocol, SDGs) where applicable.

Show cause-and-effect relationships in environmental processes.

Focus on analysis and application rather than rote definitions.

Present balanced views by mentioning impacts, challenges, and possible solutions.

Use diagrams, flowcharts, or cycles (carbon cycle, water cycle, food chain) where helpful and ensure accuracy.

Label diagrams properly and keep them neat and relevant.

Use headings, sub-points, or bullets to improve readability and clarity.

Write in clear, scientific, and objective language; avoid emotional or exaggerated claims.

Relate environmental issues to human health, economy, and sustainability where relevant.

Ensure factual accuracy and avoid outdated or incorrect information.

Prefer concise, well-organized answers over lengthy, unfocused ones.

Attempt all parts of the question to secure partial credit.

AGENDA 21

Section 1: Socio-economic Problems

Section 2: Environmental Problems

Section 3: Engagement of Stakeholders

Section 4: Implementation Phase.

2. Section 1: Socio-Economic Problems

A. **Poverty Eradication**:- It was decided to eradicate the poverty by the end of 21st century. This will help develop the economic to grow at the accelerating speed.

"Out of 100 million, 54 million people were come out of poverty in the developed countries."

- World Bank

B. **Providing Education**:- The second goal was to provide education to every person so that a better and healthy society is created.

"Drop out school ratio declined to 28% from 72% from 2001 to 2023."

- United Nation - Conference of Parties

C. **Providing Better Health facilities**:- Small built units for hospitals were decided to initiate, better medical equipment, better facilities, technology and better hospital infrastructure facilities were promised to provide.

D. **Reducing Gender Disparity**:- For the

↳ loss of biodiversity

↳ Global warming

↳ climate change

4. Section 3: Engagement of Stakeholders

All the individuals, ^{organ-} ^{ized} ^{for} ^{the} ^{purpose} ^{of} ^{the} ^{Agenda 21} ^{Conference} ^{to} ^{engage} ^{to} ^{facilitate} ^{and} ^{help} ^{to} ^{achieve} ^{this} ^{goal} ^{following} ^{is} ^{the} ^{list} ^{of} ^{stakeholders:}

↳ Business Community

↳ Non-Government Organization

↳ Agencies

↳ Institutions

↳ States

↳ local Government.

5. Section 4: Implementation Phase

In order to ensure the results of Agenda 21. Members of states were asked to implement such plans effectively and provide a ~~so~~ ^{an} annual report each year. On this program, Millennium Development Goals (2000-2015) were introduced. and Sustainable development goals are initiated (2015-2030).

5. Conclusion

Agenda 21 is one of the successful ~~plan~~ initiative for environment problem. But its success still lies on developed nations. Moreover, it helped in identifying the problems and later on segregated into socio-economic and environment problems. Agenda 21 laid the foundation of MDGs and SDGs.

QUESTION 8 B EUTROPHICATION

1. Introduction

Eutrophication is a process of ~~increasing~~ ~~un~~ algal growth in the water bodies. It is usually found in deep water bodies. The process depends on natural and cultural eutrophication. Moreover, there are various causes, implications, and ways to control this growing issue.

2. Conceptualizing Eutrophication

Eutrophication is an increase in algal growth in the water bodies due to rise in growth algal factors.

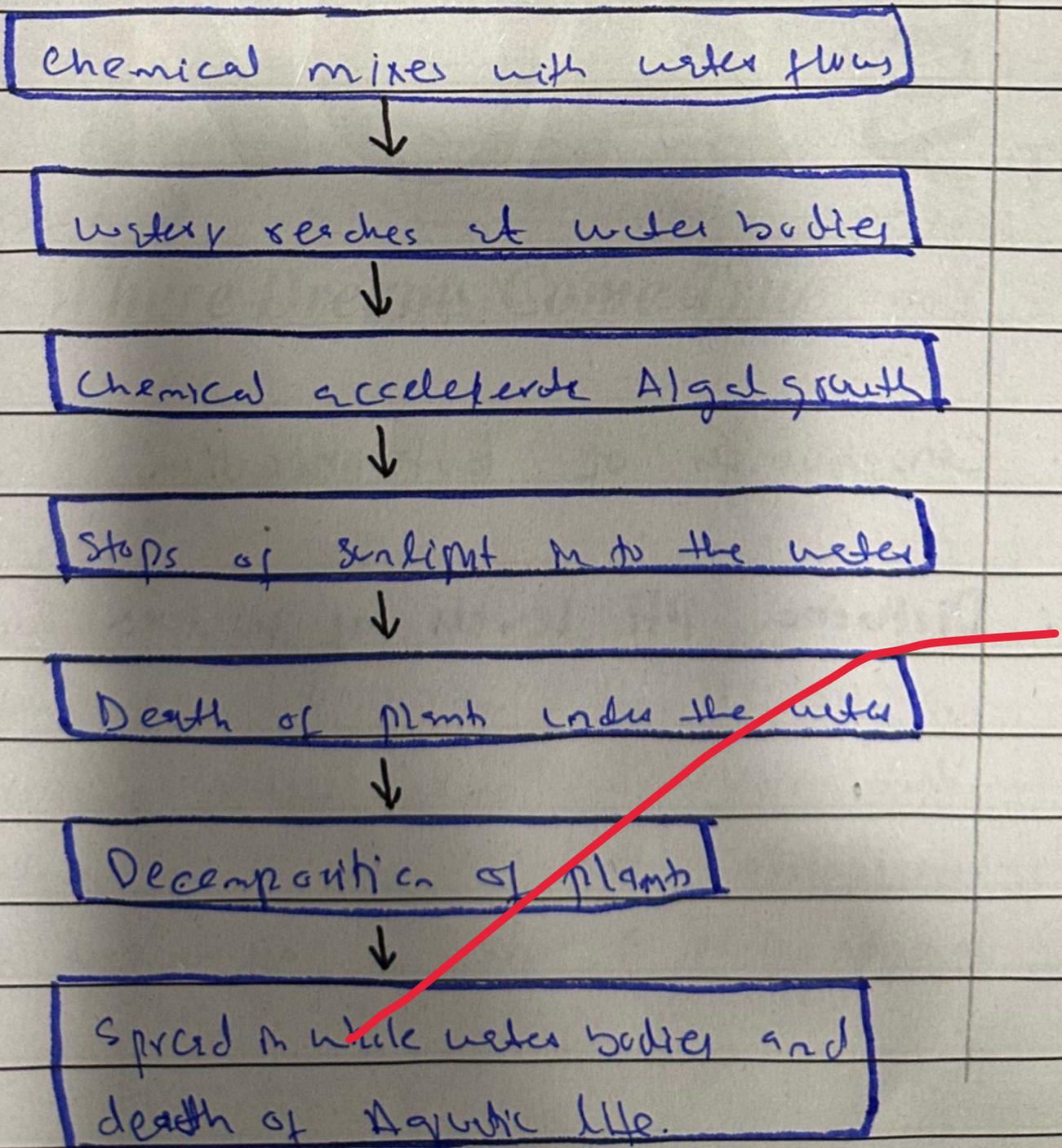
Algal Growth Factors

- Nitrogen
- Phosphorus
- Carbon.

3. Types of Eutrophication

Natural Eutro.	Cultural Eutro.
→ Natural form of eutrophication	→ Accelerated form of eutrophication
→ Slow in growth	→ Fast in growth
→ Less harmful	→ More harmful
→ takes 2-3 decades	→ 2-3 months.

4. Process of Eutrophication



5. Causes of Eutrophication

A. **Excessive use of Agro-chemicals:** Fertilizers used in agricultural fields run off with water in the bodies cause providing phosphorus to Algal growth. This increases eutrophication.

B. **Dumping of Solid waste into water Bodies:** Solid waste contains various harmful bacteria and chemicals. When it is dumped into water, it accelerates eutrophication.

C. **Unlined water bodies:** Unlined water bodies provide ~~space~~ opportunity to algal to grow in the water bodies. This ~~with~~ the passage of time increases and further added by nitrogen flow, give birth to accelerated form of eutrophication.

6. Consequences of Eutrophication

A. **Disturbance PH levels of water:** Eutrophication directly hits to the PH levels, that not only make water undrinkable, unusable but it also make water inappropriate to use in agricultural fields.

B. **Death of Aquatic life:** Increasing death and decomposition of plants in the water would disturb aquatic life in short term. But in long term it leads to death of Aquatic life such as fishes.

C. **Loss of Serene beauty:** Fresh water provides nice beautiful looks, while algae-filled water gives green and smelly and also stink in the air, due to which the ~~natural~~ natural beautiful life gets lost.

D. **Other consequences of Eutrophication:**

↳ loss of Aquatic life.

↳ loss of tourism

↳ smelly air

↳ land becomes unusable

↳ rise in diseases

↳ rise in mosquitoes.

7* **Solutions of Eutrophication.**

↳ Solid Waste Management

↳ Decrease reliance on Agro-chemicals

↳ Sustainable agro-chemicals

↳ Avoid direct run off water

↳ into river bodies

↳ Sustainable practice.

↳ Implementation of Conventions

↳ Commercial with international
Community

↳ Maintenance in water bodies.

↳ Adoption of sustainable develop-
ment.

8. Conclusion

Eutrophication is an increasing
problem in all over the world. The
natural eutrophication is less harmful.
While, cultural eutrophication is dangerous
if it impacts human and aquatic life
gets damaged. It can be controlled
when proper implementation and solutions
are adopted in true spirit with
the implementation of international
conventions.

QUESTION 7A FOOD INSECURITY

1. Introduction

Food ^{insecurity} ~~insecurity~~ is a growing
problem that the whole world is facing
currently. Unstable supply chains
have ~~caused~~ caused million of deaths
and leaving others in malnutrition.
Food insecurity is ^{interfered by} ~~derived from~~ two
major ~~factors~~ forces. Moreover, it causes
are endless and effects ~~reach~~ reach

deaths of millions of individuals while it can be controlled when effective approaches are adopted.

2. Defining food insecurity

Food insecurity problem arises when there is interrupted and distortion in supply chain of goods or even while at the cultivation process or phase.

When supply chain is interrupted, it causes food insecurity issues in the region that depends on imported food items.

Natural disasters like floods, also disturb agricultural field, that also cause food insecurity in the region.

3. Forces that influence food insecurity

Human (artificial interferences)	Natural disturbances
- conflict over water	- floods
- political influence	- Droughts
- delays in supplies	- famine
- Benefit for privileged	- Earth quakes
- conflict.	- volcanic attacks
- war	- water shortage
	- Covid

4. Causes of food insecurity

A. **Floods**:- Floods destroy the agricultural fields due to which all the cultivated land is damaged, and no production takes place. Hence, no food production, no supply chains, then no food availability in the far regions and centres.

B. **Wars**:- War like conditions, damages agricultural lands, thus creating ~~dis~~^{not} only war hysteria in the centres but also causing food insecurity.

C. **Lotus Attack**:- Lotus flies to the green belts and fields. That causes destruction of cultivated ~~lands~~ fields. Thus ~~the~~ ^{the} human does not get enough food.

Other Causes that Affect food Insecurity

- ↳ water dispute
- ↳ water ~~scarc~~ scarcity
- ↳ political influence
- ↳ Conflict over resource
- ↳ Rising population
- ↳ Droughts
- ↳ Disturbance in supply chain

5. Situations that causes food insecurity in the world

↳ Covid 19

↳ Russia - Ukraine war

↳ Sanctions in Gaza

↳ Blockage of Suez canal in

↳ April 2021 by Green ship

↳ Chaos in Sudan civil war

~~6.~~

6. Threats posed by global warming.

A. **Rising Temperature** :- It provides excessive heat to the plants & crops, due to which they are harvested at the premature life.

B. **Erratic Monsoon Rainfall season** :-

Now it is practically impossible to predict the exact monsoon season due to rising global warming. These effects ~~also~~ ~~rainfall~~ that helps in agriculture for cultivation.

C. **Exacerbating Desertification** :- Perpetual

heat waves in the regions, cause ~~more~~ dry of land, due to which green plant life is lost and death. and then ~~land~~ becomes desertified.

Other Threat Posed by Global Warming

↳ Drought

↳ famine

↳ loss of bio diversity

- ↳ species
- ↳ Genetic
- ↳ Ecosystem

7. Measures to combat food insecurity.

A. Climate-Resilient crops

B. In-house Agricultural farming

C. Consistent flow of water

D. Use of Agro-chemicals

E. Producing High Yields crops

F. Adoption of modern techniques

G. Smooth flow of supply chain

H. Use multiple modes to transport food.

I. Remove political interference on food supplies.

8. Conclusion

Food insecurity is an extended threat to the human race. When global warming initiatives, like Kyoto protocol protocols must be followed in true spirit so that global warming can be reduced, and food carties have food security instead of food insecurity.

"1.2°C Rise in Global Temperature levels."

International Panel on Climate Change

QUESTION 7(B)

1. Introduction

To protect the environment, governments have initiated the assessments, like EIA. which stands for Environment Impact Assessments. It provides a complete report of any project and that shows positive and negative externalities of environment.

2. Defining EIA

Environment Impact Assessment (EIA) is the method of conducting test of the environment that

can be created by the environment. These impacts can be positive and negative. This helps to identify whether a particular project should be executed or not.

Positive Impact	Negative Impact
→ Job creation	→ Displacement
→ Contribution in economy	→ Loss of livelihood
→ Sustainable development project	→ Deforestation
	→ Loss of bio-diversity

3. Process of EIA

A. Environment screening:- It includes basic information regarding environment, Area, land, livelihoods, water bodies

B. Environment scoping:- Identifying the scope of project that is to be executed or developed there.

C. Base-line information:- Establishing the data collection

D. → Compliance with international environment standards

E. → Producing EIA report regarding project

4. Benefit of EIA

- A. Helps in sustainable development
- B. Helps in Cost-benefit Analysis of the environment
- C. Project severity can be identified
- D. Supports development with environment consideration
- E. Avoid natural aggression, like Land clearing
- F. Compliance with international regulatory bodies
- G. Helps in creating jobs and provide livelihood
- H. Reduce poverty and unemployment
- I. Extensive data for future use.
- J. Protection of biodiversity

5. Critical View of EIA

- A. Expensive to execute assessment
- B. Limited Scope
- C. Overridden by State at time of mega projects
- D. Time consuming (4 months) ^{at least}
- E. Inability to collect the right data
- F. Mostly ignored by State for development cause.

6. Conclusion

EIA is one of the best initiative to protect the environment.

But its process is simple and self-explanatory but it is still time consuming. And for mega developmental projects, EIA is suppressed. ^{Thus,} ~~Therefore~~ giving the question of effective implementation.

QUESTION 6 A SOLID WASTE

1. Introduction

Solid waste management is a way to dispose off the waste in a proper and in effective manner to reduce any harm to the environment. At present, National Solid waste management policy gives a proper foundation of its ~~features~~ features of how it can be implemented.

2. Solid Waste Management

Solid waste management is the proper & dispose of ~~waste~~ waste so that less harm is caused in the environment. Solid waste management includes collection of waste from originating point to the specified location ~~mentioned~~ or mentioned by government.

3. Types of Solid Waste

- A. Biodegradable waste → Organic waste
- B. Recyclable waste → plastic
- C. Inerts waste → stones
- D. Electronic waste → Batteries

4. Features of Solid Waste Management

↳ Who is responsible to collect waste?
Government or Private organization

↳ Availability of labour force

↳ Availability of large and small trucks

↳ Effective communication

↳ Proper allocation of dumping

sites.

↳ location of recycle items

where segregation can be done

5. Salient features of National Solid Waste Management Policy of Pakistan 2002

- ↳ Segregation of waste
- ↳ Use of sustainable measures
- ↳ Use of effective measures to decompose
- ↳ Providing effective services
- ↳ Specification of allocated places for garbage
- ↳ Completely dispose of waste with due care
- ↳ Specified recyclable materials to bring the garbage recycle item there
- ↳ Sustainable approaches to dispose waste
- ↳ Use of mask and other necessary equipment ~~for~~ workers protection.
- ↳ Complete disposal of waste through landfill, undergrounds, open air dumping, incineration.

6. Conclusion

Solid waste management is necessary to keep the environment clean and pure. India has been policy regarding waste management. But it needs to ^{be} implemented in the true spirit.

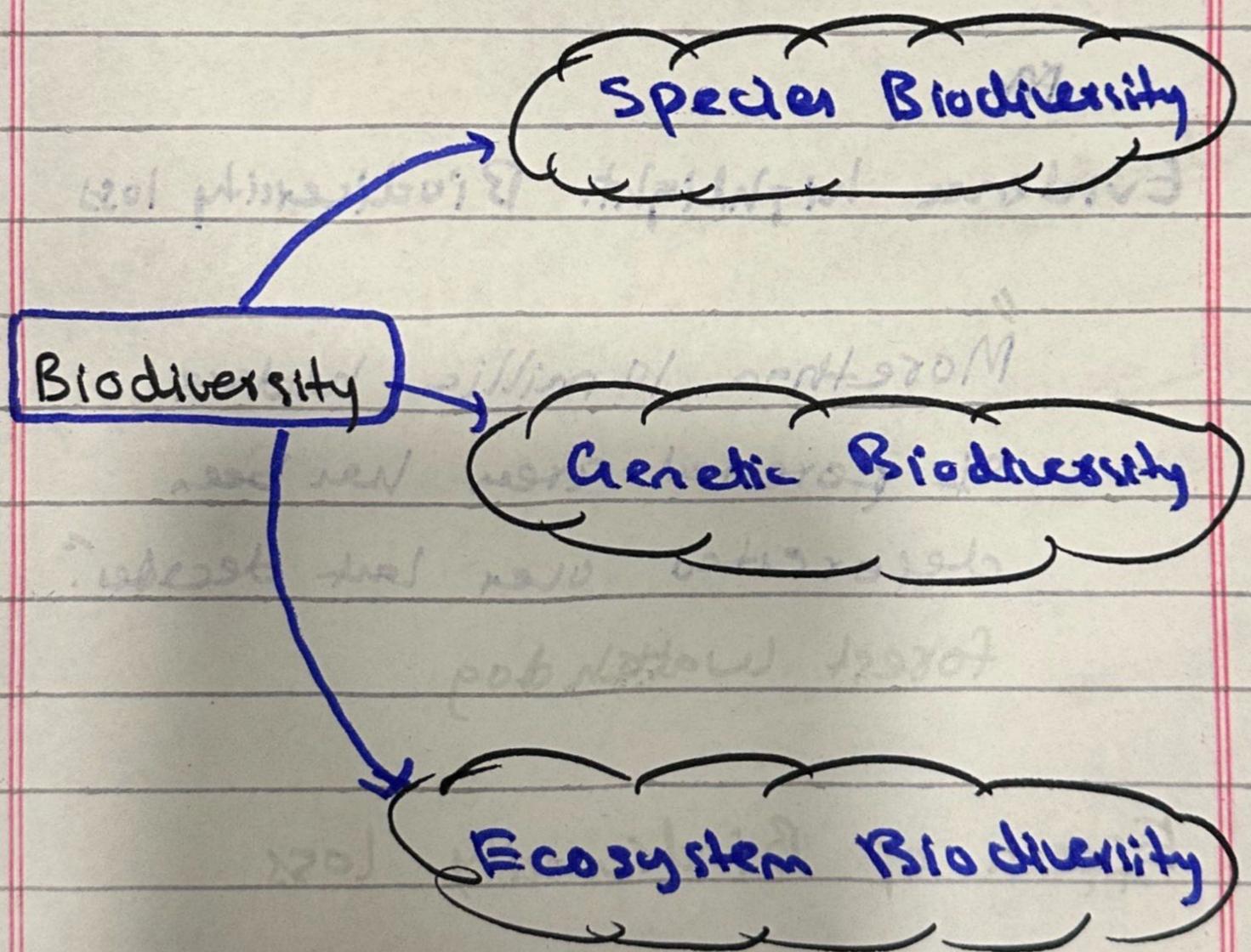
QUESTION 6 B Biodiversity

1. Introduction

Biodiversity is the one of those which world is encountering. Many species have been extinct or of now. The decline of biodiversity is because of human intervention in the natural setting as well as natural. Therefore, International Convention was signed to protect biodiversity loss.

2. Conceptualizing Biodiversity

Biodiversity refers to life of many species. It is divided into three different biodiversity. Species biodiversity which means many species. Genetic biodiversity mean, many genes within same species. and Ecosystem diversity which means life of whole ecosystem.



3. Causes of Biodiversity loss

- ↳ Deforestation
- ↳ Urbanization

↳ Industrialization

↳ Climate Change

↳ Global Warming

↳ Desertification

↳ Eutrophication

↳ Air Pollution

↳ Land Pollution

↳ Noise Pollution

4. Evidence highlight Biodiversity loss

"More than 10 million hectares of forested area has been deforested over last decades".
Forest Watchdog

5. Effect of Biodiversity loss

↳ Disturbance of Ecological

↳ chain

↳ Decrease tourism spots

↳ Create smily area

- ↳ Loss of Aquatic life
- ↳ loss of beautiful environment
aesthetic

6. Examples of Biodiversity loss

- ↳ Dinosaur
- ↳ Coral reefs
- ↳ Extinct migratory birds

7. Significance of Biodiversity

- ✓ Smooth chain of ecosystem
- ✓ human reliance on instruments
- ✓ value of biodiversity
- ✓ Human benefits from biodiversity
- ✓ Helps in trading
- ✓ Used in medicines
- ✓ Helps in research purpose
- ✓ Human ~~livelihood~~ livelihood dependence.

✓ other data biodiversity will
be lost

b. Conclusion

Biodiversity loss is a
serious loss to the environment and
humans. ~~But~~ further delays in
prognostic approaches and actions will
~~Further~~ further cause loss in
biodiversity. Not only ~~human~~
environment will be adversely affected
human lives will also become difficult
to ~~survive~~ survive.