

17 Geographical Perspective on Selected Issues

Fastrack® Revision

► Environmental Pollution

Environmental pollution results from the release of substances and energy from waste products of human activities.

It can be classified into: (i) Water pollution, (ii) Air pollution, (iii) Noise pollution (iv) Land pollution (degradation).

► Water Pollution

It is the contamination of water bodies, usually as a result of human activities, in such a manner that negatively affects its legitimate uses. Quality of water has degraded due to indiscriminate use of water because of the increasing population and industrial expansion.

► **Sources of Water Pollution:** Though water pollutants are also created from natural sources, but pollutants from human activities are the real causes of concern. Thus, there are two sources of water pollution:

- **Natural Sources:** These sources include erosion, landslides, decay and decomposition of plants and animals etc.

- **Human Sources:** These sources include the pollutants from human activities. Human sources are classified into:

► **Industries:** Industries produce several undesirable products like industrial wastes, polluted waste water, poisonous gases, chemical residues, heavy metals, dust etc., which are disposed off in running water or lakes leading to their contamination.

The major water polluting industries are leather, pulp and paper, textiles and chemicals.

- **Chemicals, Fertilizers, etc., used in Agriculture:** Various types of chemicals used in modern agriculture such as inorganic fertilizers, pesticides and herbicides are washed down to rivers, lakes etc., from where they infiltrate the soil to reach the ground water.

Fertilizer induces an increase in the nitrate content of surface water.

- **Cultural Activities:** Cultural activities such as pilgrimage, religious fairs, tourism etc., also cause water pollution.

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The common diseases caused by water pollution are diarrhoea, intestinal worms, hepatitis etc. Data from the WHO shows that almost one-fourth of the communicable diseases in India are water-borne.

► **Pollution in Ganga:** The pollution of river Ganga, flowing through one of the most populous regions of India is a cause of great concerns among all.

- To improve the conditions of the river, National Mission for clean Ganga was initiated. The '**Namami Gange Programme**' was launched for the same.

► **Sources of Pollution in the Ganga and Yamuna Rivers:** The Ganga and Yamuna rivers are among the most polluted rivers in India. Sources of pollution in the Ganga river are as follows:

- Industrial pollution from towns like Kanpur.
- Domestic wastes from urban centres.
- Dumping of carcasses (dead bodies) in the river.

► **Polluted Stretches of the Ganga River:** Downstream of Kanpur, downstream of Varanasi, Farakka Barrage. Sources of pollution in the Yamuna river are as follows:

- Extraction of water by Haryana and Uttar Pradesh for irrigation.
- Agricultural runoff resulting in high levels of micro pollutants into the Yamuna.
- Domestic and industrial waste of Delhi flowing into the river.

► **Polluted Stretches of the Yamuna River:** Delhi to confluence with Chambal, Mathura and Agra.

► **Namami Gange Programme:** Ganga, as a river, has national importance but the river requires cleaning by effectively controlling the pollution of its water. The Union Government has launched the '**Namami Gange Programme**' with the following objectives:

- Developing sewerage treatment systems in towns,
- Monitoring of industrial effluents,
- Development of river front,
- Afforestation along the bank of river to increase biodiversity.
- Cleaning of the river surface,
- Development of 'Ganga Grams' in Uttarakhand, UP, Bihar, Jharkhand and West Bengal,
- Creating public awareness to avoid adding pollutants into the river even in the form of rituals.

► Air Pollution

A large proportion of pollutants like dust fumes, gas, fog, odour, smoke or vapour present in air for a long duration is known as air pollution. These pollutants are harmful for flora, fauna and to property.

► **Sources of Air Pollution:** Combustion of fossil fuels, mining and industries are the main sources of air pollution. These processes release oxides of sulphur and nitrogen, hydrocarbons, carbon dioxide, carbon monoxide, lead and asbestos. With increasing use of varieties of fuels as source of energy, there is a marked increase in emission of toxic gases into the atmosphere resulting in the pollution of air.

► **Consequences/Harmful Effects of Air Pollution:**

- Air pollution causes various diseases related to respiratory, nervous and circulatory systems.
- Smog caused due to atmospheric pollution proves very harmful to human health.
- Acid Rain caused due to air pollution has disastrous effects on flora, fauna and property.



► **Noise Pollution**

Noise pollution refers to the state of unbearable and uncomfortable noise to human beings which is caused by noise from different sources.

Sources of Noise Pollution:

- Industries, factories, mechanised construction and demolition works.
- Automobiles and aircrafts.
- Periodical but polluting noise from sirens, loudspeakers used in various festivals, programmes associated with community activities.
- Noise produced by traffic:
 - It is the source of biggest nuisance.
 - Its intensity and nature depends upon factors such as type of aircraft, vehicle, train and the condition of road, as well as, that of vehicle.
 - In sea traffic, the noise pollution is confined to the harbour due to loading and unloading activities being carried.

► **Consequences/Harmful Effects of Noise Pollution:**

Increase in environmental noise pollution can cause hearing impairment, hypertension, annoyance, mental problems or disorders, sleep disturbance etc.

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Noise Pollution in Oceans

Noise pollution in oceans has increased tenfold since the 1960s. Many oceanologists studied and concluded that the noise levels in 2003-2004 were about 10 to 12 decibels higher than in 1964-1966.

Its main reason could be:

- Population increase at global level.
- Vast increase in the global shipping trade
- A number of ships plying the oceans
- Higher speed of ships.

► **Types and Sources of Pollution along with the Pollution Involved.**

Pollution Types	Pollution Involved	Sources of Pollution
Air Pollution	Oxides of sulphur (SO ₂ , SO ₃), Oxides of nitrogen, carbon monoxide, hydrocarbon, ammonia, lead, aldehydes asbestos and beryllium	Combustion of coal, petrol and diesel, industrial processes, solid waste disposal, sewage disposal, etc.
Water Pollution	Odour, dissolved and suspended solids, ammonia and urea, nitrate and nitrites, chloride, fluoride, carbonates, oil and grease, insecticides and pesticides residue, tannin, coliform MPM (bacterial count), sulphates and sulphides, heavy metals e.g., lead, arsenic, mercury, manganese, etc., radioactive substances.	Sewage disposal, urban run-off, toxic effluents from industries, run-off over cultivated lands and nuclear power plants.

Land Pollution	Human and animal excreta, viruses and bacteria, garbage and vectors therein, pesticides and fertiliser-residue alkalinity, fluorides, radioactive substances.	Improper human activities, disposal of untreated industrial waste, use of pesticides and fertilisers.
Noise Pollution	High level of noise above tolerance level	Aircrafts, automobiles, trains, industrial processing and advertising media.

► **Land Pollution (Degradation)**

It refers to a temporary or a permanent decline in productive capacity of the land. Land degradation is caused by soil erosion, water-logging, salinisation and alkalinisation of land. Human made processes are more harmful than natural processes in India.

► The National Remote Sensing Centre (NRSC) has classified the wastelands by using remote sensing techniques and are categorised according to the processes that have created them. Various factors that induce land degradation are:

- Natural
- Human
- Natural and human both

► **Wastelands Formed by Natural Factors**

- Gullied/ravinous land
- Desertic or coastal sands
- Barren rocky areas
- Steep sloping lands and
- Glacial areas

They account for 2.4% of the geographical area.

► **Wastelands Formed by Human Factors**

- Degraded shifting cultivation area
- Degraded land under plantation crops
- Degraded forests
- Degraded pastures
- Mining and industrial wastelands

► The human activities that are responsible for such degradation of land are deforestation, overgrazing, mining, quarrying etc.

- They account for 5.88% of the geographical area.
- Thus, it is quite clear that the land under degradation due to natural factors (2.4%) is much less as compared to land under degradation due to human processes (5.88%).
- In states such as Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha, deforestation due to mining has caused severe land degradation.
- In states such as Gujarat, Rajasthan, Madhya Pradesh and Maharashtra, overgrazing is one of the main reasons for land degradation.

► **Wastelands Formed by Natural and Human Factors:**

Degraded lands are caused by natural as well as human factors such as:

- Waterlogged and marshy areas salinity
- Land affected by alkalinity
- Land with/without scrub
- They account for 7.51% of the geographical area.

► **Measures of Preventing Land Degradation**

- **Strip Farming:** It is a practice in which cultivated crops are sown in alternative strips to prevent water movements.
- **Crop Rotation:** It is one of the agricultural practice in which different crops are grown in same area following a rotation system which helps in replenishment of the soil.
- **Ridge and Furrow Formation:** Soil erosion is one of the factors responsible for land degradation. It can be prevented by formation of ridge and furrow during irrigation which lessens runoff.
- **Construction of Dams:** This usually checks or reduces the velocity of runoff so that it supports vegetation.
- **Contour Farming:** This type of farming is usually practised across the hill side and is useful in collecting and diverting the runoff to avoid erosion.
- **Treatment of Industrial Waste Water:** Industrial wastes should be treated properly before discharging into rivers as this river water when used for irrigation may cause land pollution because the toxic elements present in the river water may infiltrate the soil. After proper treatment, this water can also be used for irrigation.
- **Convert Waste Into Resource:** Wastes generated from households and industries should be treated as resource and utilised for generating energy and compost. If this waste is not treated properly and dumped on the land, land gets degraded.
- **Improve Sanitary Conditions:** Sanitary conditions can be improved by providing Sulabh Swachalayas (toilet facilities) in slums and other areas where there is absence of these facilities. Thus, we can minimise land degradation in such areas.

► **Watershed Management Programmes:** These programmes acknowledge the linkage between land, water and vegetation and attempts to improve livelihoods of people through natural resource management and community participation. These are helpful in preventing land degradation and improving soil quality.

► **Joint Participation of Community and Government:** There is an urgent need for joint participation of both government and community for reduction of land degradation.

► **Urban Waste Disposal**

- Urban waste disposal is a serious problem in India because (except some metropolitan cities) in most of other cities and towns in the country, about 30 to 50% of the waste generated are left uncollected which accumulates on streets, in open spaces between houses and in wastelands leading to serious health hazards.
- Solid wastes refer to a variety of old and used articles, for example, stained small pieces of metals, broken glasswares, plastic container, polythene bags, ashes, floppies, CDs etc., dumped at different places. About 90% of the solid waste is collected and disposed off in metropolitan cities like Mumbai, Kolkata, Chennai, Bengaluru, etc.

► **Cause of Health Hazards and Diseases**

Solid wastes cause health hazards through creation of:

- Obnoxious smell and
- Harbours of flies and rodents which acts as carriers of diseases like typhoid, malaria, cholera, diphtheria etc.

► **Sources of Solid Wastes:**

The main sources of solid wastes are:

- Household or Domestic Establishment
- Industrial or Commercial Establishment

► **Effects of Improper Management of Solid Waste**

- Solid waste can create inconvenience rapidly if they are not properly handled. Rainwater and wind can spread this waste and cause further problems.
- Untreated wastes release various poisonous biogases such as methane.
- Solid waste create foul smell and harbours flies and rodents that can cause typhoid, diphtheria, diarrhoea, malaria, cholera and other diseases.

► **Migration**

Movement of the people for the specific purpose from one place to another in the country or to foreign country is called as migration. Rural to urban migration trend is very common nowadays. This trend of migration takes place due to a number of factors like:

- High demand for labour in urban areas.
- Low job opportunities in rural areas.
- Unbalanced pattern of development between urban and rural areas.
- Poverty.

► **Trends of Urbanisation**

About 50% of the world's six billion population lives in cities and more will join them in near future. The proportion is estimated to increase further in the coming years.

By 2050, an estimated 75% of the world's population will live in urban areas. Urban population grows as a result of natural increase, net-in-migration, and sometimes reclassification of urban areas.

► **Development of Slums in India**

The rural and urban areas in India have different functions, sometimes complementing each other. As compared to rural areas, the urban centres are more similar in their composition.

- Slums are residential areas of the least choice, dilapidated (broken-down) houses, poor hygienic conditions, poor ventilation, lack of basic amenities like drinking water, light and toilet facilities, etc.
- The reasons for coming up of slums in India are given below:
 - Migration of people from rural areas to urban centres in search of livelihood, but then being unable to afford proper housing due to high rent and high costs of land.
 - Population explosion and poverty force the urban poor to live in slums and that leads to an increase in the size of slums.
 - Shortage of land forces the urban poor to live in increasingly dense communities creating slums in the process.
 - Delayed procedures for land development forces people to stay in congested areas which further leads to creation of slums.



- A lack of efficiency of urban local bodies coupled with unplanned city management is also one of the major reasons for creation of slum areas.
- A lack of political will for developing slums can also be seen, as slums provide cheap and steady labour (party workers) to political parties.

► **Problems of Slums in India:** Problems of slums in India are as follows:

- Slums are environmentally incompatible and degraded areas.
- Slums have dilapidated houses where people are forced to live due to poverty or lesser income.
- People of slums face poor hygienic conditions. Thus, they are prone to many diseases and illness.
- The houses in slums have poor ventilation. So, people residing there face suffocation problems.
- Slums have substandard housing or illegal and inadequate building structures.
- Slums are overcrowded having narrow street pattern which is prone to serious hazards, e.g., fire hazards

because of congested spaces, which increase the chances of its spread.

- Slums lack in basic amenities like drinking water, light and toilet facilities.
- They are marked by unregulated drainage system and open defecation.
- Besides this, most of the slum dwellers engage in low-paid, high risk-prone unorganised sectors of the urban economy. Because of such situation, they are undernourished and prone to different types of illness.
- Due to poverty, slum dwellers are unable to give proper education to their children.
- Poverty has also made these people vulnerable to drug abuse, alcoholism, crime, vandalism, escapism, apathy and ultimately social exclusion.

► **The Swachh Bharat Mission (SBM)**

The Swachh Bharat Mission was an initiative launched on 2nd October, 2014 by the Government of India. Its main aim is to improve the quality of life in urban slums as well as to improve sanitary conditions in the country.



Practice Exercise



Multiple Choice Questions

- Q 1. Which one of the following rivers is highly polluted?
a. Brahmaputra b. Sutlej
c. Yamuna d. Godavari
- Q 2. Which one of the following diseases is caused by water pollution?
a. Conjunctivitis b. Diarrhoea
c. Respiratory infections d. Bronchitis
- Q 3. Which one of the following is the cause of acid rain?
a. Water pollution b. Land pollution
c. Noise pollution d. Air pollution
- Q 4. Push and pull factors are responsible for:
a. migration b. land degradation
c. slums d. air pollution
- Q 5. Which of these activities are the most significant contributor to water pollution?
a. Households b. Farms
c. Industries d. Tourism
- Q 6. Which of the following is not a cause of air pollution?
a. Combustion of fossil fuels
b. Mining activities
c. Industries
d. Agricultural runoff
- Q 7. Which of the following elements is both a water pollutant and air pollutant?
a. Sulphates b. Carbon monoxide
c. Ammonia d. Mercury

- Q 8. Respiratory diseases are mainly caused by pollution.
a. land b. water c. air d. noise

- Q 9. What % age of total geographical area of India is classified as man-made degraded CWL?
a. 2.18% b. 5.88% c. 7.51% d. 2.4%

- Q 10. Which of the following wastelands have been primarily formed by natural agents?
a. Barren rocky areas b. Desertic sands
c. Steep sloping land d. All of these

- Q 11. Which of these sources are responsible for water pollution?
1. Households 2. Industries
3. Farms and fields 4. Tourism

Codes:

- a. 1, 2 and 4 b. 1, 2, 3 and 4
c. 1, 3 and 4 d. 1, 2 and 3

- Q 12. Which of the following is/are the causes of pollution in Yamuna?
1. Industrial pollution from Kanpur.
2. Domestic waste from Delhi.
3. Extraction of water by Haryana and Uttar Pradesh for irrigation.

Codes:

- a. 1, 2 and 3 b. 2 and 3
c. 1 and 3 d. 1 and 2

- Q 13. Combustion of fossil fuels, mining and industries are the main sources of:
a. air pollution b. noise pollution
c. smog d. All of these



Q 14. The immediate alterations that the world is witnessing are due to:

- a. global warming b. water borne diseases
c. reservoirs d. Both b. and c.

Q 15. Glasswares, plastic containers, polythene bags, ashes, floppies, CDs, are examples of:

- a. pollutants b. solid waste
c. fertilizers d. None of these

Q 16. Leather, pulp and paper, textiles and chemicals industries are the major:

- a. acid rain producing industries
b. water polluting industries
c. pesticides producing industries
d. None of the above

Q 17. are residential areas of the least choice, dilapidated houses, poor hygienic conditions, poor ventilation, lack of basic amenities like drinking water, light and toilet facilities etc.

- a. Slums b. Flats
c. Bungalows d. All of these

Q 18. makes people vulnerable to drug abuse, alcoholism, crime, vandalism, escapism, apathy and ultimately social exclusion.

- a. Crime b. Poverty
c. Criticism d. None of these

Q 19. Temporary or a permanent decline in productive capacity of the land is known as:

- a. Land degradation b. Marshy land
c. Desalination of land d. None of these

Q 20. 'Namami Gange Programme' was launched by:

- a. Union Government b. State Government
c. District Government d. None of these

Q 21. Surface water is:

- a. pure b. impure c. salty d. brackish

Q 22. Which one of the following is not a significant factor in creating noise pollution? (CBSE 2023)

- a. Mechanised Construction
b. Automobiles
c. Fodder Cutting Machines
d. Variety of Machines

Q 23. Match the states given in Column I to the possible cause of land degradation given in Column II.

Column I (States)	Column II (Major Cause of Land Degradation)
A. Uttar Pradesh	(i) Abandoned mining sites
B. Odisha	(ii) Overgrazing
C. Rajasthan	(iii) Water logging due to over irrigation

Codes:

- | | | | | | |
|----------|------|-------|----------|-----|-------|
| A | B | C | A | B | C |
| a. (I) | (ii) | (iii) | b. (iii) | (I) | (ii) |
| c. (iii) | (II) | (I) | d. (II) | (I) | (iii) |

Q 24. Consider the following statements and choose the correct answer with the help of given options:

Statement I: Land degradation, landslides, soil erosion, desertification are the major threats to the environment.

Statement II: People started encroaching the common lands to build up commercial areas, housing complexes in the urban areas and to expand the agricultural land in the rural areas.

- a. Both the statements are true, statement II does not explain statement I correctly.
b. Both the statements are true and statement II correctly explains the statement I.
c. Both statements I and II are false.
d. Statement I is true and statement II is false.



Assertion & Reason Type Questions

Directions (Q. Nos. 25-29): In the following questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:

- a. Both (A) and (R) are true and (R) is the correct explanation of (A).
b. Both (A) and (R) are true, but (R) is not the correct explanation of (A).
c. (A) is true, but (R) is false.
d. (A) is false, but (R) is true.

Q 25. Assertion (A): India is facing a serious problem of urban waste disposal.

Reason (R): About 30 to 50 per cent of the wastes generated are left uncontrolled and untreated.

Q 26. Assertion (A): Watershed management is an effective way to prevent land degradation.

Reason (R): Watershed management programmes acknowledge the linkages between land, water and vegetation and improve the livelihoods of people through natural resource management and community participation.

Q 27. Assertion (A): In India, population in big cities is rapidly increasing.

Reason (R): It is because due to low opportunities in smaller and medium cities, the poor people generally bypass these small cities and directly come to mega cities for livelihood.

Q 28. Assertion (A): Of all the sources of noise pollution, noise produced by traffic is the biggest nuisance.

Reason (R): It is because its intensity and nature depend upon factors such as the type of aircraft, vehicle, train and the condition of road as well as that of vehicle.

Q 29. Assertion (A): The Union Government has launched the 'Namami Gange Programme'.

Reason (R): It is because Ganga, which is the river of national importance, needs to be cleaned up.

Answers

1. (c) 2. (b) 3. (d) 4. (a) 5. (c)
6. (d) 7. (c) 8. (c) 9. (b) 10. (d)
11. (b) 12. (b) 13. (a) 14. (a) 15. (b)
16. (b) 17. (a) 18. (b) 19. (a) 20. (a)
21. (b) 22. (c) 23. (b) 24. (a) 25. (a)
26. (a) 27. (a) 28. (a) 29. (a)



Passage Based Questions

Passage 1

Read the passage given below and answer the questions that follow by choosing the most appropriate option:

Indiscriminate use of water by increasing population and industrial expansion has led degradation of the quality of water considerably. Surface water available from rivers, canals, lakes etc., is never pure. It contains small quantities of suspended particles, organic and inorganic substances. When concentration of these substances increases, the water becomes polluted and hence becomes unfit for use. In such a situation, the self-purifying capacity of water is unable to purify the water. Though water pollutants are also created from natural sources (erosion, landslides, decay and decomposition of plants and animals, etc.) pollutants from human activities are the real causes of concern.

Human beings pollute the water through industrial, agricultural and cultural activities. Among these activities, industry is the most significant contributor. Industries produce several undesirable products including industrial wastes, polluted waste water, poisonous gases, chemical residuals, numerous heavy metals, dust, smoke, etc. Most of the industrial wastes are disposed off in running water or lakes. Consequently, poisonous elements reach the reservoirs, rivers and other water bodies, which destroy the bio-system of these waters.

Major water polluting industries are leather, pulp and paper, textiles and chemicals. Various types of chemicals used in modern agriculture such as inorganic fertilizers, pesticides and herbicides are also pollution generating components. These chemicals are washed down to rivers, lakes and tanks. These chemicals also infiltrate the soil to reach the ground water. Fertilizer induces an increase in the nitrate content of surface waters. Cultural activities such as pilgrimage, religious fairs, tourism, etc. also cause water pollution.

In India, almost all surface water sources are contaminated and unfit for human consumption. Water pollution is a source of various water-borne diseases. The diseases commonly caused due to contaminated water are diarrhoea, intestinal worms, hepatitis, etc.

- Q 1. Which of the following is the largest contributor to water pollution in India?
a. Agriculture b. Households
c. Industry d. Services
- Q 2. Indiscriminate use of fertilizers leads to increase in which of the following harmful components in water.
a. Sulphur b. Nitrates
c. Calcite d. Fluoride
- Q 3. Which among the following is a polluting industry?
a. Leather Industry
b. Pulp and paper Industry
c. Chemicals Industry
d. All of the above
- Q 4. Which of the following type of disease is caused by water pollution?
a. Respiratory illness b. Hepatitis
c. Lung disease d. All of these

Answers

1. (c) 2. (b) 3. (d) 4. (b)

Passage 2

Read the passage given below and answer the questions that follow:

Based on the universal law 'Polluter pays' effort to restore the ecology and safeguard the human health with people's participation has taken place in Daurala near Meerut. These efforts are now bearing fruits after a span of three years when Meerut based NGO had developed a model for ecological restoration. The meeting of the Daurala Industries officials, NGOs, Government officials and other stakeholders at Meerut has brought out results. The powerful logics, authentic studies and the pressure of people have brought a new lease of life to the twelve thousand residents of this village. It was in the year 2003 that the pitiable condition of Dauralaites drew the attention of the civil society.

The groundwater of this village was contaminated with heavy metals. The reason was that the untreated wastewater of Daurala industries was leaching to the groundwater table. The NGO conducted a door to door survey of the health status of the residents and came out with a report. The organisation, the village community and people's representatives sat together to find out



sustainable solutions to the health problem. The industrialists showed a keen interest towards checking the deteriorating ecology. The overhead water tank's capacity in the village was enhanced and a 900m extra pipeline was laid to supply potable water to the community. The silted pond of the village was cleaned and recharged by desilting it. Large quantity of silt was removed paving way to large quantity of water so that it recharged the aquifers. Rain water harvesting structures have been constructed at different places which has helped in diluting the contaminants of the groundwater after the monsoons. 1000 trees have also been planted which have improved the environment.

Q 1. Which type of pollution Daurala was experiencing?

Ans. Daurala was experiencing water pollution.

Q 2. Which agency/organisation has played the most important role in resolving the pollution related issues at Daurala?

Ans. The civil society has played the most important role.

Q 3. Which measures were taken by the people to dilute the harmful contaminants of ground water?

Ans. Rainwater harvesting method was followed by the people to dilute the harmful contaminants of ground water.

Passage 3

Read the passage given below and answer the questions that follow:

Dharavi-Asia's Largest Slum

"....Buses merely skirt the periphery. Autorickshaws cannot go there; Dharavi is part of central Bombay where three wheelers are banned. Only one main road traverses the slum. The misnamed 'ninety-foot road,' which has been reduced to less than half of that for most of its length. Some of the side alleys and lanes are so narrow that not even a bicycle can pass.

The whole neighbourhood consists of temporary buildings, two or three storeyed high with rusty iron stairways to the upper part, where a single room is rented by a whole family, sometimes accommodating twelve or more people; it is a kind of tropical version of the industrial dwelling of Victorian London's East End.

But Dharavi is a keeper of more sombre secrets that the revulsion it inspires in the rich; a revulsion, moreover, that is in direct proportion to the role it serves in the creation of the wealth of Bombay. In this place of shadowless, treeless sunlight, uncollected garbage, stagnant pools of foul water, where the only non-human creatures are

the shining black crows and long grey rats, some of the most beautiful, valuable and useful articles in India are made. From Dharavi come delicate ceramics and pottery, exquisite embroidery and zari work, sophisticated leather goods, high fashion garments, finely-wrought metalwork, delicate jewellery settings, wood garments, wood carvings and furniture that would find its way into the richest houses, both in India and abroad... Dharavi was an arm of the sea, that was filled by waste, largely produced by the people who have come to live there: Scheduled Castes and poor Muslims. It comprises rambling building of corrugated metal, 20 metres high in places, used for the treatment of hides and tanning. There are pleasant parts, but rotting garbage is everywhere..."

Q 1. Justify the statement, "slum dwellers need help in making the transition from inhabitants of precarious urban settlements to citizens with full human rights and civic responsibilities."

Ans. The slums are a manifestation of mismanaged urban planning. Adequate and efficient policies of the government will help in transition from inhabitants of precarious urban settlements to citizens with full human rights and civic responsibilities. The citizens also need to be ready to accept this transition of the slum dwellers.

Q 2. Which type of vehicles are banned in Dharavi?

Ans. Three-wheelers are banned in Dharavi.

Q 3. What type of migrants occupy the slum areas?

Ans. Slum areas are occupied by the migrants who were forced to migrate from the rural areas to the urban centres in search of livelihood but could not afford proper housing due to high rent and high cost of land.



Very Short Answer Type Questions

Q 1. What is the criterion for the classification of pollution? (CBSE 2015)

Ans. Different types of pollution are classified on the basis of medium through which pollutants are transported and diffused.

Q 2. Name any two natural sources of water pollutants.

Ans. Two natural sources of water pollutants are:
(i) Erosion.
(ii) Landslides.

Q 3. Mention any two sources of water pollution by human beings in India. (CBSE 2018)

Ans. The two sources of water pollution by human beings in India are as follows:
(i) The urban sources of polluted water and sewage, municipal and domestic garbage that is disposed into the water.



- (ii) The disposal of industrial effluents into the running water which makes the water body degraded and poisonous.

COMMON ERROR

Students sometimes mention the natural sources instead of human agents and lose marks.

Q 4. Name the diseases caused due to polluted water.

Ans. Diarrhoea, intestinal worms and hepatitis.

Q 5. Which stretch of Yamuna is most polluted?

Ans. Delhi to Etawah.

Q 6. Name the two metropolitan cities which are the main polluters of the River Ganga before it reaches Varanasi.

Ans. Kanpur and Prayagraj.

Q 7. Which programme has been launched by the union government for cleaning of river Ganga?

Ans. The Namami Gange Programme.

Q 8. Which areas in India have become alkaline and why?

Ans. Northern India have become alkaline due to over irrigation.

Q 9. Name the anthropogenic sources of pollution.

Ans. Industrial sources, urban sources, agricultural sources, cultural sources are the anthropogenic sources of pollution.

Q 10. Name any two diseases that are caused by air pollution.

OR

Which diseases are caused due to air pollution?

Ans. Diseases caused due to air pollution are:

- (i) Diseases related to respiratory system like asthma.
- (ii) Allergies.

Q 11. Mention the root cause of 'acid rain'.

OR

What source of pollution is responsible for acid rain?

Ans. Causes of acid rain are:

- (i) Air pollution.
- (ii) Urban smog due to automobiles.

Q 12. Describe the two main sources of noise pollution in India.

Ans. The two main sources of noise pollution in India are:

- (i) Industries and factories.
- (ii) Mechanised construction works.

Q 13. Define 'Land Degradation'.

Ans. Land degradation refers to either as a temporary or a permanent decline in productive capacity of the land.

Q 14. How can urban waste become a resource?

Ans. Urban waste can become a resource when it is used for generating energy and compost.

Q 15. What does solid waste refer to?

Ans. Solid waste refers to a variety of old and used articles. For example, stained small pieces of metals, broken glass wares, plastic container, polythene bags, ashes etc., dumped at different places.

Q 16. Mention any two main sources of land pollution in India.

Ans. The main sources of land pollution in India are:

- (i) Untreated industrial wastes.
- (ii) Excessive use of pesticides and fertilizers.

Q 17. "Urban waste disposal is a serious problem in India." Suggest any two measures that we as citizens can take to solve this problem of urban waste.

(CBSE 2015)

Ans. Measures to solve the problem of urban waste are:

- (i) As concerned citizens, we should ensure that there are proper waste disposal bins provided by the municipality.
- (ii) We can also segregate the wet and dry waste.
- (iii) Strict laws can be made and fines can be issued for not disposing waste in the required manner.

Q 18. Name a few types of wastelands.

Ans. There are a few types of wastelands such as gullied/ravinous land, desertic or coastal sands, barren rocky areas, steep sloping land and glacial areas, which are primarily caused by natural agents.

Q 19. Define the term 'migration.' (CBSE 2015)

Ans. Movement of the people for the specific purpose from one place to another in the country or to foreign country is called as migration.

Q 20. Give the meaning of the term 'slum'.

Ans. Slums are residential areas of the least choice, dilapidated houses, poor hygienic conditions, poor ventilation, lack of basic amenities like drinking water, light and toilet facilities etc.

Q 21. What type of people live in slums?

Ans. Slums are inhabited by those people who were forced to migrate from the rural areas to urban centres in search of livelihood but could not afford proper housing due to high rent and high costs of land. They occupy environmentally incompatible and degraded areas.

Q 22. Why do people migrate in large number from rural to urban areas in India? (CBSE 2016)

Ans. In India, people migrate from rural to urban areas mainly due to variety of factors such as social, economic and political factors which are:

- (i) Employment.
- (ii) Lack of basic infrastructure facilities, i.e., education, healthcare.



Short Answer Type Questions

Q 1. How is environmental pollution caused? Mention any four types of pollution responsible for the environmental degradation. (CBSE 2015)

Ans. Environmental pollution results from the release of substances and energy from waste products of human activities.

The four types of pollution responsible for the environmental degradation are:

- (i) Air pollution
- (ii) Water pollution
- (iii) Land pollution
- (iv) Noise pollution

Q 2. Explain the three sources, responsible for water pollution by human beings in India. (CBSE SQP 2015)

Ans. Three sources responsible for water pollution by human beings in India are:

- (i) **Industries:** Industries produce several undesirable products like industrial wastes, polluted waste water, poisonous gases, chemical residues, heavy metals, dust etc., which are disposed off in running water or lakes leading to their contamination. The major water polluting industries are leather, pulp and paper, textiles and chemicals.
- (ii) **Chemicals, Fertilizers etc., Used in Agriculture:** Various types of chemicals used in modern agriculture such as inorganic fertilizers, pesticides and herbicides are washed down to rivers, lakes etc. from where they infiltrate the soil to reach the ground water. Fertilizer induces an increase in the nitrate content of surface water.
- (iii) **Cultural Activities:** Cultural activities such as pilgrimage, religious fairs, tourism etc., also cause water pollution.

Q 3. How do industries pollute India's water bodies? Explain with examples. (CBSE 2015)

OR

Explain with examples how the industries are responsible for polluting water resources in India.

Ans. The pollution of India's water bodies by industries can be understood as follows:

- (i) **Production of Undesirable Products by Industries:** Industries produce several undesirable products including wastes, polluted waste water, poisonous gases, chemical residues, numerous heavy metals, dust, smoke etc.
- (ii) **Disposal of these Undesirable Products into Water Bodies:** Most of the industrial wastes are disposed off in running water or lakes.

(iii) **Contamination of these Water Bodies:**

Consequently, poisonous elements reach the reservoirs, rivers and other water bodies, which destroy the bio-system of these waters.

Examples of Industries responsible for polluting water resources in India are:

- (a) Leather Industry
- (b) Pulp and paper Industry
- (c) Textiles industry
- (d) Chemicals Industry

Q 4. Describe the nature of water pollution in India.

Ans. In India, the nature of water pollution is described as follow:

- (i) Industries produce several undesirable products including industrial wastes, polluted waste water, poisonous gases, chemical residues, numerous heavy metals, dust, smoke, etc.
- (ii) Most of the industrial wastes are disposed off in running water or lakes. Consequently, poisonous elements reach the reservoirs, rivers and other waste bodies, which destroy the biosystem of these waters.
- (iii) Indiscriminate use of water by increasing population and industrial expansion has led to degradation of the quality of water considerably. Surface water available from rivers, canals, lakes etc., are never pure. It contains small quantities of suspended particles, organic and inorganic substances.
- (iv) Though water pollutants are also created from natural sources such as decomposition of plants and animals, pollutants from human sources are the real causes of concern.
- (v) Various types of chemicals used in modern agriculture such as inorganic fertilizers, pesticides and herbicides are also pollution generating compounds. These chemicals also infiltrate the soil to reach the groundwater. Cultural activities such as pilgrimage, religious fairs, tourism, etc., also cause water pollution.

Q 5. "Indiscriminate use of water by increasing population and industrial expansion has led to degradation of the water quality considerably in India." Explain the values that can help in maintaining the quality of water. (CBSE 2017)

Ans. The values that can help in maintaining the quality of water are as follows:

- (i) Judicious/optimum use of water
- (ii) Controlling population
- (iii) Recycle and reuse of water
- (iv) Watershed Management
- (v) Rain water harvesting
- (vi) Rules and regulations



Q 6. The Ganga and Yamuna rivers are among the most polluted rivers in India. State the sources of pollution of these rivers and also mention their polluted stretches.

Ans. The Ganga and Yamuna rivers are among the most polluted rivers in India.

Sources of pollution of the Ganga river are as follows:

- (i) Industrial pollution from towns like Kanpur.
- (ii) Domestic wastes from urban centres.
- (iii) Dumping of carcasses (dead bodies) in the river.

Polluted Stretches of the Ganga River: Downstream of Kanpur, downstream of Varanasi, Farakka Barrage. Sources of pollution in the Yamuna river are as follows:

- (i) Extraction of water by Haryana and Uttar Pradesh for irrigation.
- (ii) Agricultural runoff resulting in high levels of micro pollutants into the Yamuna.
- (iii) Domestic and industrial waste of Delhi flowing into the river.

Polluted Stretches of the Yamuna River: Delhi to confluence with Chambal, Mathura and Agra.

Q 7. Describe any three major problems related to water in India.

Ans. Water related problems in India are:

- (i) Indiscriminate use of water by increasing population.
- (ii) Industrial expansion has led to the degradation of the quality of water.
- (iii) Per capita availability of water is decreasing due to increasing population.

Q 8. Outline the objective of 'Namami Gange Programme.'

Ans. The Union Government has launched 'The Namami Gange Programme' with the following objectives:

- (i) Developing sewerage treatment system in towns.
- (ii) Monitoring of industrial effluents.
- (iii) Development of river front.
- (iv) Afforestation along the bank of river to increase biodiversity.
- (v) Cleaning of the river surface.
- (vi) Development of 'Ganga Grams' in Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal.
- (vii) Creating public awareness to avoid adding pollutants into the river in the form of rituals.

Q 9. Define the term 'air pollution'. Explain any two harmful effects of air pollution. (CBSE 2015)

Ans. A large proportion of pollutants like dust fumes, gas, fog, odour, smoke or vapour present in air for a long duration is known as air pollution.

Two harmful effects of air pollution are:

- (i) Air pollution causes various diseases related to respiratory, nervous and circulatory systems.
- (ii) Smog caused due to atmospheric pollution proves very harmful to human health.

Q 10. Explain any three human causes of air pollution in India. (CBSE 2011)

Ans. Air pollution in India are caused by the following factors:

- (i) Large scale burning of fossil fuels such as coal, diesel, petroleum products, harmful green house gases like carbon dioxide, carbon monoxide, oxides of nitrogen and sulphur. This has mainly resulted from the increasing industrial activity and the strive for economic development in India.
- (ii) Automobile emissions contain harmful smoke and poisonous gases that have resulted in increase in the percentage of greenhouse gases and play a significant role in air pollution.
- (iii) The growing demand for energy resources have resulted in the burning of atomic fuels in the atomic plants. This emits heat and poisonous gases which pollutes the air in various ways.

Q 11. What values can help in maintaining pollution free air? (CBSE 2017)

OR

What measures can be followed to maintain pollution free air?

Ans. Values which can help in maintaining pollution free air are:

- (i) Air pollution is harmful for environment and mankind, therefore, it is our responsibility to save air from pollution.
- (ii) People must follow rules for saving air.
- (iii) We must use eco-friendly, non-conventional sources of energy (solar, biogas and wind energy) as conventional sources (coal, oil and gas) are harmful.

Q 12. How has noise pollution become a serious problem in recent years in India? Explain. (CBSE SQP 2023-24)

OR

What is noise pollution? Explain any four sources of noise pollution. (CBSE 2015)

Ans. Noise pollution refers to the state of unbearable and uncomfortable noise to human beings which is caused by noise from different sources.

The sources of noise pollution are:

- (i) Industries, factories, mechanised construction and demolition works.
- (ii) Automobiles and aircrafts.
- (iii) Periodical but polluting noise from sirens, loudspeakers used in various festivals, programmes associated with community activities.
- (iv) Noise produced by traffic:
 - (a) It is the source of biggest nuisance.
 - (b) Its intensity and nature depends upon factors such as: type of aircraft, vehicle, train and the condition of road, as well as, that of vehicle.

- (c) In sea traffic, the noise pollution is confined to harbour due to loading and unloading activities being carried.

Q 13. What is the difference between pollution and pollutants?

Ans. Differences between pollution and pollutants are given below:

S.No.	Basis of Difference	Pollution	Pollutants
(i)	Definition	Pollution is nothing but the addition of undesirable and harmful elements in our environment in large amount over a long period of time.	Pollutants are those elements that deteriorate the quality of land, air or water by getting mixed with it.
(ii)	Effects Caused	Pollution changes the physical chemical or biological characteristics of air, land and water that is undesirable and affects human life adversely.	Pollutants occur on land in air or water in the form of gases, solids or liquids.
(iii)	Types/ Examples	Types of pollution are air, water, land etc.	Examples of pollutants are radioactive elements carbon monoxide, solid waste etc.



TIP

Mention the difference preferably in tabular form instead of points or paragraph.

Q 14. Why is urban waste disposal a serious problem in India? Explain any three problems.

Ans. Urban waste disposal is a serious problem in India because (except some metropolitan cities) in most of other cities and towns in the country, about 30 to 50% of the waste generated are left uncollected which accumulates on streets, in open spaces between houses and in wastelands leading to serious health hazards.

Three major problems associated with urban waste disposal in India are:

(i) **Cause of Health Hazards and Diseases:** Solid wastes cause health hazards through creation of:

- Obnoxious smell and
- Harbouring of flies and rodents which acts as carriers of diseases like typhoid, malaria, cholera, diphtheria etc.

(ii) **Improper Handling may Cause Great Inconvenience:** These wastes cause frequent nuisance as and when:

- They are carelessly handled.
- Spread by wind and
- Splattered through rainwater.

(iii) **Cause of River Pollution and Health Problems:**

- The dumping of industrial wastes into rivers leads to water pollution.
- River pollution from city based industries and untreated sewage leads to serious health problems downstream.

Q 15. Urban waste disposal in major metropolitan cities of India has become a major cause of concern in recent years. Explain how can we overcome this problem?

OR

The disposal of urban waste has become a serious concern for the local authorities. Analyse the statement with suitable example.

(CBSE SQP 2022, Term-2)

Ans. Urban waste disposal in major metropolitan cities of India has become a major cause of concern in recent years as in metropolitan cities like Mumbai, Kolkata, Chennai etc., about 90% of the solid waste is collected and disposed, instead of 100%. In most of other cities and towns in the country, about 30 to 50% of the waste generated are left uncollected which accumulates on streets, in open spaces between houses and in wastelands leading to serious health hazards. Steps that can be taken to overcome this problem are:

(i) Installation of "Waste-to-Compost" and Biomethanation Plants:

- These wastes should be treated as a resource and utilised for generating energy and compost.
- Biomethanation of these wastes must be carried out under which organic material is microbiologically converted under anaerobic conditions to biogas.

(ii) Innovative measures such as 3R's (Reduce, Reuse and Recycle) must be brought into practice.

Q 16. "The urban waste should be properly treated as a resource for various needs of mankind." Explain the values that can help in changing the urban waste into resources.

(CBSE 2016)

Ans. The values that can help in changing the urban waste into resources are:

(i) **Creating Awareness:** Societies should be made aware for using the urban waste in the productive use, for example, kitchen and garden waste can be converted into compost, sewage can be used to produce biogas.

(ii) **To Evolve the New Techniques:** Innovative production techniques should be used such as waste exchanges process in which the waste product of one process becomes the raw material for a next process. Waste exchange process will help to use waste which is difficult to eliminate. For example, in the manufacturing of soap, glycerine will be extracted from the waste.

(iii) **Caring Attitude Towards Urban Waste:** The urban waste should be treated with care as scraps can be used at the beginning of the manufacturing process so that they do not become a waste product. For example, paper mills use the damaged rolls at the beginning of the production line, the metal and plastic items can be incorporated into new products.

Q 17. Explain the causes of migration of unskilled migrants from rural to urban areas in India.

(CBSE 2015)

Ans. The causes of migration of unskilled migrants from rural to urban areas in India are:

- (i) High demand for labour in urban areas.
- (ii) Low job opportunities in rural areas.
- (iii) Unbalanced pattern of development between urban and rural areas.
- (iv) Poverty.

Q 18. How does migration affect the environment?

Ans. Migration affects the environment in the following ways:

- (i) Migration often alters the environment in many place whether it is place of destination where a person wants to go to or the place of origin where a person belongs to.
- (ii) Researches from many locations have shown that deforestation and land degradation may occur in destination areas due to the alteration of land use patterns by the migrants. For example, they build new houses by clearing vegetation or forest cover and use water resources and also discharge households and industrial wastes into water.
- (iii) Displaced people due to conflict lack the most basic necessities and rely on natural resources for their survival.
- (iv) Unsustainable use of natural resources can lead to environmental degradation.
- (v) Due to large number of migrants, pollutants are released in the environment at large scale in the form of air, water, land and noise pollutions. Thus, migration affects the environment adversely.

Q 19. Explain the reasons for coming up of slums in developing countries like India with suitable examples. (CBSE SQP 2018)

Ans. The reasons for coming up of slums in developing countries like India are as follows:

- (i) Migration of people from rural areas to urban centres in search of livelihood but then being unable to afford proper housing due to high rent and high costs of land.
- (ii) Population explosion and poverty force the urban poor to live in slums and that leads to an increase in the size of slums.
- (iii) Shortage of land forces the urban poor to live in increasingly dense communities creating slums in the process.
- (iv) Delayed procedures for land development forces people to stay in congested areas which further leads to creation of slums.
- (v) A lack of efficiency of urban local bodies coupled with unplanned city management is also one of the major reasons for creation of slum areas.
- (vi) A lack of political will for developing slums can also be seen, as slums provide cheap and steady labour (party workers) to political parties.
Example: Dharavi, Asia's largest slum.

Q 20. How can we improve the conditions of slum dwellers?

Ans. The conditions of slum dwellers can be improved by the following measures:

- (i) **Empowerment of Local Authorities:** Local authorities need to be empowered with financial and human resources to deliver services and infrastructure to the slum dwellers in India. Cities must draw up local long term strategies for improving the lives of slum dwellers in India.
- (ii) **Formulation of Strategies by Government** State governments have to develop strategies to prevent the formation of new slums. For example, The Swachh Bharat Mission (SBM) is a part of urban renewal mission launched by the Government of India to improve the quality of life in urban slums.
- (iii) **Increased Focus on Provision of Basic Services and Infrastructure:** Public investments must focus on providing access to basic services and infrastructure. The cities need to invest in housing, water, sanitation, energy and urban services, such as garbage disposal. These services and infrastructure must reach the poor living in informal settlements.

Q 21. Examine any five factors which are responsible for population flow from rural to urban areas in India.

(CBSE 2022, Term-2)

Ans. There are different factors responsible for population flow from rural to urban areas in India are:

- (i) Rural-urban migration



- (ii) Increased household income
- (iii) Topographic factors such as: slope, soil, elevation.
- (iv) Economic aspect
- (v) Focusing on horizontal growth rather than vertical growth.
- (vi) Unbalanced spatial development
- (vii) Regional development
- (viii) Nature resources
- (ix) Urban planning policies
- (x) Social aspects such as poverty.



Long Answer Type Questions

Q 1. What measures can be used to minimise air pollution?

Ans. Some of the measures that can be used to minimise air pollution are:

- (i) Replacement of conventional energy sources with the renewable or non-conventional energy sources.
- (ii) Electric engines must be used in place of steam or diesel engines.
- (iii) Checking of forest fires must be there. Preventive measures must be undertaken to protect the forests.
- (iv) Filters must be used for chimneys so that dangerous gases emitted from fireplaces in homes and factories get filtered and do not affect the air quality severely.
- (v) The use of crackers during festivals and weddings must be avoided.
- (vi) Afforestation must be implemented.
- (vii) Public transport must be preferred over private transport.
- (viii) Old automobiles must be replaced by new ones which should be redesigned in such a way that their emission causes minimum pollution.

Q 2. How can we control noise pollution? Suggest some measures.

Ans. The measures to control noise pollution are:

- (i) **Acoustic Zoning:** Increased distance between source and receiver by zoning of noise industrial areas, bus terminals and railway stations, etc. away from the residential areas go a long way in minimising noise pollution.
There should be silence zones near residential areas, hospitals, etc.
- (ii) **Suppression of Noise at Source:** This is possible if working methods are improved by:
 - (a) Designing and fabricating quieter machines to replace the noise ones.
 - (b) Proper lubrication and better maintenance of machines.
 - (c) Installing noise machines in sound proof chambers.

- (d) Covering noise producing machine parts with sound absorbing materials to check noise pollution.

- (e) Using silencers to control noise from automobiles, ducts, exhausts, etc.

(iii) **Planting of Trees:** Planting green trees and shrubs along roads, hospitals, educational institutions, etc. help in noise reduction to a considerable extent.

(iv) **Legislative Measures:** Strict legislative measures need to be enforced to control the noise pollution such as:

- (a) Minimum use of loudspeakers and amplifiers especially near silent zones.
- (b) Banning pressure horns in automobiles.
- (c) Framing a separate Noise Pollution Act.

(v) **Strict Enforcement of Laws:** The government agencies should strictly enforce the law to curb noise pollution and impose penalties for violation. Apart from these measures, ear plugs, ear muffs, etc., can be provided to reduce exposure to noise pollution.

Q 3. Suggest measures for reduction of land degradation.

Ans. Measures for reduction of land degradation are:

- (i) **Strip Farming:** It is a practice in which cultivated crops are sown in alternative strips to prevent water movements.
- (ii) **Crop Rotation:** It is one of the agricultural practice in which different crops are grown in same area following a rotation system which helps in replenishment of the soil.
- (iii) **Ridge and Furrow Formation:** Soil erosion is one of the factors responsible for land degradation. It can be prevented by formation of ridge and furrow during irrigation which lessens runoff.
- (iv) **Construction of Dams:** This usually checks or reduces the velocity of runoff so that it supports vegetation.
- (v) **Contour Farming:** This type of farming is usually practised across the hill side and is useful in collecting and diverting the runoff to avoid erosion.
- (vi) **Treatment of Industrial Wastes Water:** Industrial waste should be treated properly before discharging into rivers as this river water when used for irrigation may cause land pollution because the toxic elements present in the river water may infiltrate the soil. After proper treatment, this water can also be used for irrigation.
- (vii) **Convert Wastes into Resources:** Wastes generated from households and industries should be

treated as resource and utilised for generating energy and compost. If this waste is not treated properly and dumped on the land, land gets degraded.

(viii) **Improve Sanitary Conditions:** Sanitary conditions can be improved by providing Sulabh Swachalayas (toilet facilities) in slums and other areas where there is absence of these facilities. Thus, we can minimise land degradation in such areas.

(ix) **Watershed Management Programmes:** These programmes acknowledge the linkage between land, water and vegetation and attempts to improve livelihoods of people through natural resource management and community participation. These are helpful in preventing land degradation and improving soil quality.

(x) **Joint Participation of Community and Government:** There is an urgent need for joint participation of both government and community for reduction of land degradation. (Any five)

Q 4. "Land degradation in India is caused by human made processes that are more harmful than natural processes." Explain the statement with suitable examples. (CBSE SQP 2023-24)

Ans. "Land degradation caused by human made processes are more harmful than natural processes in India."

This statement is true.

Various agents that induce land degradation are:
Natural, Human, Natural and human both.

(i) **Wastelands Formed by Natural Factors:** Wastelands are caused by natural factors such as:

- (a) Gullied/ravinous land
- (b) Desertic or coastal sands
- (c) Barren rocky areas
- (d) Steep sloping lands and
- (e) Glacial areas

They account for 2.4% of the geographical area.

(ii) **Wastelands Formed by Human Factors:** Wastelands are caused by human action such as:

- (a) Degraded shifting cultivation area
- (b) Degraded land under plantation crops
- (c) Degraded forests
- (d) Degraded pastures
- (e) Mining and industrial wastelands

The human activities that are responsible for such degradation of land are deforestation, overgrazing, mining, quarrying, etc.

(a) They account for 5.88% of the geographical area. Thus, it is quite clear that the land under degradation due to natural factors (2.4%) is much less as compared to land under degradation due to human processes, (5.88%).

(b) In states such as Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha, deforestation due to mining has caused severe land degradation.

(c) In states such as Gujarat, Rajasthan, Madhya Pradesh and Maharashtra, overgrazing is one of the main reasons for land degradation.

(iii) **Wastelands Formed by Natural and Human factors:**

Degraded lands are caused by natural as well as human factors such as:

- (a) Waterlogged and marshy areas salinity
- (b) Land affected by alkalinity
- (c) Land with/without scrub

They account for 7.51% of the geographical area.

Q 5. How is the use of plastic bags harmful for environmental degradation? Evaluate it by citing suitable reasons. (CBSE SQP 2022, Term-2)

Ans. Plastic is a non-biodegradable substance and its use and production should be minimum. Plastic debris is found absolutely everywhere, from the Arctic to Antarctica. It clogs street drains in our cities; it litters campgrounds and national park, and is even piling up on Mount Everest. But thanks to runoff, and to our fondness for directly dumping our trash into the nearest river or lake, plastic is growing increasingly common in the world's oceans. When plastics are broken down, this simply means one large piece of plastic is reduced into a bunch of smaller pieces of plastic. These smaller pieces of plastic can be consumed by smaller animals, but are still indigestible. It affects all organisms in the food chain from tiny species like plankton through to whales. Toxins work their way up the food chain when plastic is ingested and can even be present in the fish people eat. From cell phones to bicycle helmets to IV bags, plastic has molded society in ways that make life easier and safer. But the synthetic material also has left harmful imprints on the environment. Chemicals added to plastics are absorbed by human bodies. Some of these compounds have been found to alter hormones or have other potential human health effects. Plastic debris, laced with chemicals and often ingested by marine animals, can injure or poison wildlife. Floating plastic waste, which can survive for thousands of years in water, serves as mini transportation devices for invasive species, disrupting habitats. Plastic buried deep in landfills can leach harmful chemicals that spread into groundwater. Around 4 per cent of world oil production is used as a feedstock to make plastics, and a similar amount is consumed as energy in the process.

Q 6. What are slums? Describe any three major problems of slums in India.

OR

Explain any three problems faced by slum dwellers in India.

Ans. Slums are those area/colonies which are occupied by those migrants who were forced to migrate from the rural areas to urban areas/centres in search of livelihood but due to high rent and high cost of land, they could not afford proper housing.

Problems of slums in India are as follows:

- (i) Slums are environmentally incompatible and degraded areas.
- (ii) Slums have dilapidated (broken-down) houses where people are forced to live due to poverty or lesser income.
- (iii) People of slums face poor hygienic conditions. Thus, they are prone to many diseases and illness.
- (iv) The houses in slums have poor ventilation. So, people residing there face suffocation problems.

(v) Slums have substandard housing or illegal and inadequate building structures.

(vi) Slums are overcrowded having narrow street pattern which is prone to serious hazards, e.g., fire hazards because of congested spaces, which increase the chances of its spread.

(vii) Slums lack in basic amenities like drinking water, light and toilet facilities.

(viii) They are marked by unregulated drainage system and open defecation.

(ix) Besides this, most of the slum dwellers engage in low-paid, high risk-prone unorganised sectors of the urban economy. Because of such situation, they are undernourished and prone to different types of illness.

(x) Due to poverty, slum dwellers are unable to give proper education to their children.

(xi) Poverty has also made these people vulnerable to drug abuse, alcoholism, crime, vandalism, escapism, apathy and ultimately social exclusion.



Chapter Test

Multiple Choice Questions

Q 1. Which one of the following is the cause of acid rain?

- a. Water pollution b. Land pollution
- c. Noise pollution d. Air pollution

Q 2. Which of the following elements is both a water pollutant and air pollutant?

- a. Sulphates b. Carbon monoxide
- c. Ammonia d. Mercury

Q 3. Which of the following wastelands have been primarily formed by natural agents?

- a. Barren rocky areas b. Desertic sands
- c. Steep sloping land d. All of the above

Q 4. 'Namami Gange Programme' was launched by:

- a. Union Government b. State Government
- c. District Government d. None of these

Assertion and Reason Type Questions

Directions (Q. No 5-6): In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option:

- a. Both (A) and (R) are true and (R) is the correct explanation of (A).
- b. Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- c. (A) is true, but (R) is false.
- d. (A) is false, but (R) is true.

Q 5. Assertion (A): Watershed management is an effective way to prevent land degradation.

Reason (R): Watershed management programmes acknowledge the linkages between land, water and vegetation and improves the livelihoods of people through natural resource management and community participation.

Q 6. Assertion (A): The Union Government has launched the 'Namami Gange Programme'.

Reason (R): It is because Ganga, which is the river of national importance, needs to be cleaned up.

Passage Based Question

Q 7. Read the passage given below and answer the questions that follow:

Dharavi-Asia's Largest Slum

"....Buses merely skirt the periphery. Autorickshaws cannot go there; Dharavi is part of central Bombay where three wheelers are banned. Only one main road traverses the slum. The mis-called 'ninety-foot road,' which has been reduced to less than half of that for most of its length. Some of the side alleys and lanes are so narrow that not even a bicycle can pass.

The whole neighbourhood consists of temporary buildings, two or three storeyed high with rusty



iron stairways to the upper part, where a single room is rented by a whole family, sometimes accommodating twelve or more people; it is a kind of tropical version of the industrial dwelling of Victorian London's East End.

But Dharavi is a keeper of more sombre secrets that the revulsion it inspires in the rich; a revulsion, moreover, that is in direct proportion to the role it serves in the creation of the wealth of Bombay. In this place of shadowless, treeless sunlight, uncollected garbage, stagnant pools of foul water, where the only non-human creatures are the shining black crows and long grey rats, some of the most beautiful, valuable and useful articles in India are made. From Dharavi come delicate ceramics and pottery, exquisite embroidery and zari work, sophisticated leather goods, high fashion garments, finely-wrought metalwork, delicate jewellery settings, wood garments, wood carvings and furniture that would find its way into the richest houses, both in India and abroad... Dharavi was an arm of the sea, that was filled by waste, largely produced by the people who have come to live there: Scheduled Castes and poor Muslims. It comprises rambling building of corrugated metal, 20 metres high in places, used for the treatment of hides and tanning. There are pleasant parts, but rotting garbage is everywhere..."

- (i) Justify the statement, "slum dwellers need help in making the transition from inhabitants of precarious urban settlements to citizens with full human rights and civic responsibilities."
- (ii) Which type of vehicles are banned in Dharavi?
- (iii) What type of migrants occupy the slum areas?

Very Short Answer Type Questions

- Q 8. Why do people migrate in large number from rural to urban areas in India?
- Q 9. Mention any two main sources of land pollution in India.
- Q 10. Mention any two sources of water pollutants created by humans.

Short Answer Type Questions

- Q 11. Define the term 'air pollution'. Explain any two harmful effects of air pollution.
- Q 12. Urban waste disposal in major metropolitan cities of India has become a major cause of concern in recent years. How can we overcome this problem?
- Q 13. Explain any three human causes of air pollution in India.
- Q 14. Explain the causes of migration of unskilled migrants from rural to urban areas in India.

Long Answer Type Questions

- Q 15. What measures can be used to minimise air pollution?
- Q 16. Suggest measures for reduction of land degradation.

