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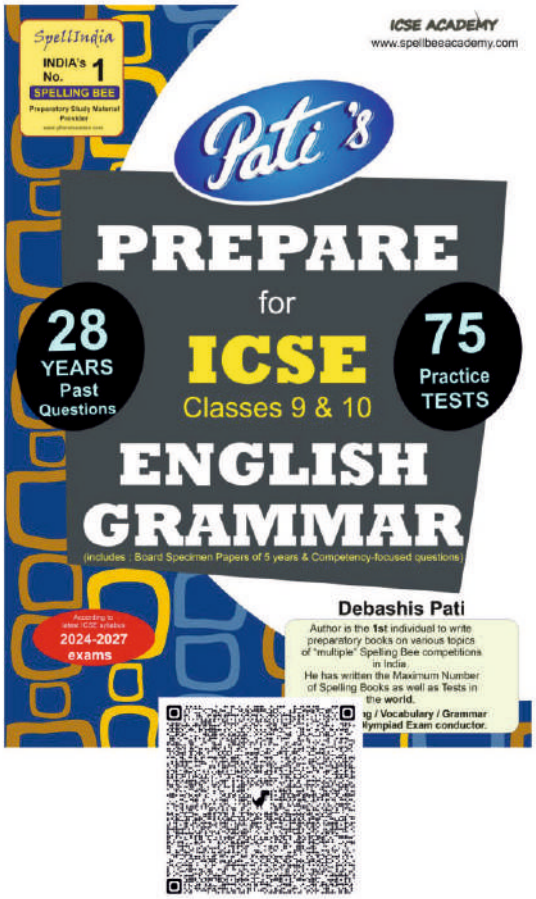
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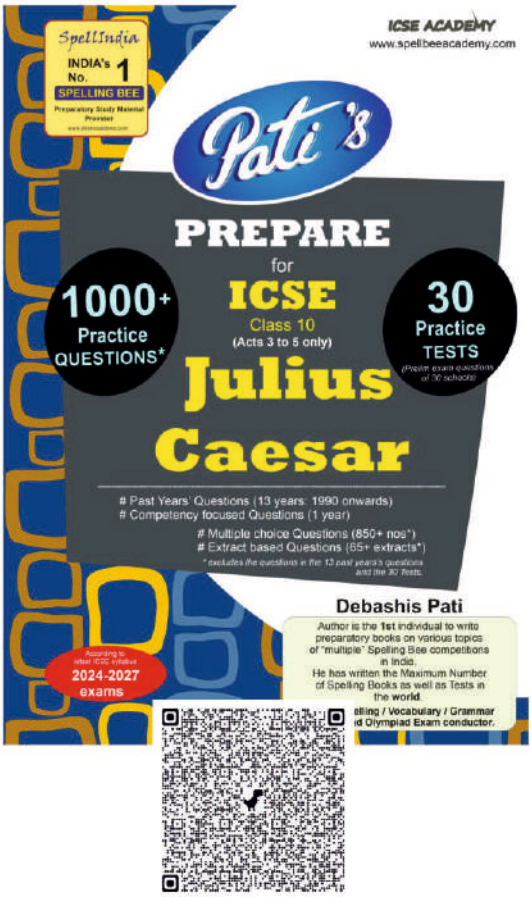
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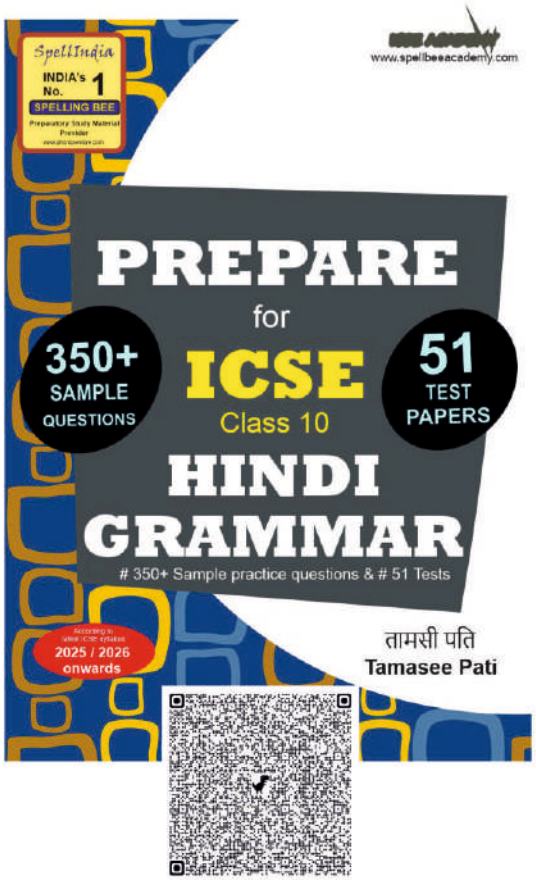
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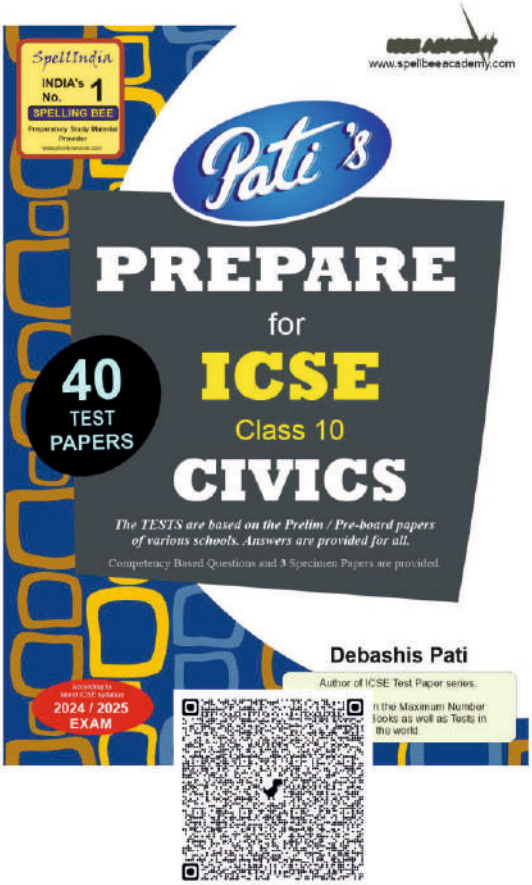
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Past Year Papers

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ICSE ACADEMY

2026 - Improvement

ENVIRONMENTAL APPLICATIONS

Maximum Marks: 100

Time allowed: Two hours

1. *Answers to this Paper must be written on the paper provided separately.*
2. *You will **not** be allowed to write during the first **15** minutes.*
3. *This time is to be spent in reading the question paper.*
4. ***The time given at the head of this Paper is the time allowed for writing the answers.***

5. *Attempt **all** questions from **Section A** and **any four** questions from **Section B.***
6. *The intended marks for questions or parts of questions are given in brackets[ ].*

Instruction for the Supervising Examiner

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SECTION A (40 Marks)

*(Attempt **all** questions from this **Section**.)*

Question 1

Choose the correct answers to the questions from the given options. [20]

(Do not copy the questions, write the correct answers only.)

(i) Which of the following factors influence Globalisation?

1. Debt trap
2. Freedom of trade
3. Brain drain
4. Improvements in communication

(a) 1 and 2

(b) 2 and 4

(c) 3 and 4

(d) 2 and 3

(ii) Secondary treatment of wastewater deals with:

(a) suspended particulate matter

(b) harmful chemicals

(c) biological matter

(d) solid waste

(iii) What is the primary objective of decentralised governance?

(a) Decisions are taken by the central government

(b) To eliminate the role of state government

(c) Bureaucratic control

(d) Local self-government takes all decisions

(iv) The main reason behind generation of wasteland is:

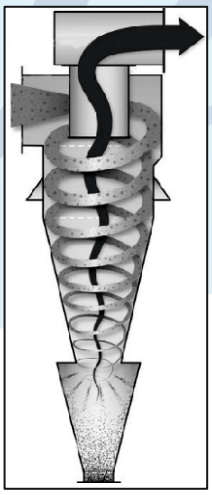
(a) eco-tourism

(b) urbanisation

(c) afforestation

(d) poor agricultural practices

(v) The picture given below represents one of the *air control devices* used in dust collection systems in the industrial process. Identify the principle behind the device.



(a) Gravitational force

(b) Combustion technology

(c) Rotation effect and gravity

(d) Electrostatic charge

(vi) Which of the following solutions effectively address the fuelwood crisis?

1. Using solar devices
2. Urbanisation
3. Afforestation
4. Deforestation

(a) 1 and 2

(b) 1 and 3

(c) 3 and 4

(d) 1, 2 and 3

(vii) **Assertion (A):** Waste segregation helps in reducing environmental pollution.

Reason (R): Segregation of waste at source allows for better recycling and disposal.

(a) (A) is true and (R) is false.

(b) (A) is false and (R) is true.

(c) Both (A) and (R) are true and (R) is the correct explanation of (A).

(d) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(viii) **Assertion (A):** NGOs work for the welfare of children, women and environment.

Reason (R): NGOs are working for sustainable development.

(a) (A) is true and (R) is false.

(b) (A) is false and (R) is true.

(c) Both (A) and (R) are true and (R) is the correct explanation of (A).

(d) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(ix) **Statement 1:** In Delhi, cars, buses, autos and two-wheelers are run by CNG and do not contribute to air pollution.

Statement 2: CNG is a non-polluting and non-toxic fuel.

(a) Both Statement (1) and Statement (2) are true.

(b) Statement (1) is true and Statement (2) is false.

(c) Both Statement (1) and Statement (2) are false.

(d) Statement (1) is false and Statement (2) is true.

(x) The main feature of Dry Compost Toilet is that it:

(a) uses electricity

(b) saves water

(c) uses chemicals for cleaning

(d) increases soil pollution

(xi) Thermal power plants use _____ to produce electricity.

(a) coal

(b) uranium

(c) water

(d) the earth's internal heat

(xii) A systematic way of analysing and formulating the rate of natural resource depletion is:

(a) Environmental Impact Assessment

(b) Non-resource accounting

(c) Natural resource accounting

(d) Ecofriendly technology

(xiii) Which of the following is a technique used by farmers to prevent soil degradation?

(a) Mono cropping

(b) Overgrazing

(c) Mining

(d) Contour bunding

(xiv) Identify the **APPROPRIATE** statements with reference to Night Soil:

1. Rich in nutrients
2. Increases soil fertility
3. Increases crop yield
4. Increases pollution

(a) 1, 2 and 4

(b) 2, 3 and 4

(c) 3, 4 and 1

(d) 1, 2 and 3

(xv) What is the primary characteristic of a **micro hydel** power plant?

(a) It uses nuclear energy.

(b) It requires a large dam as reservoir.

(c) It generates electricity up to 100 kilowatts.

(d) It uses fossil fuel for power generation.

(xvi) Identify the **INCORRECT** statement with reference to biodiesel.

(a) Gives less mileage.

(b) Reduces the emission of hydrocarbon.

(c) Not available everywhere.

(d) Considered to be a conventional source of energy.

(xvii) To reduce the negative impacts on the environment, which of the following project requires EIA?

(a) Crude oil refinery

(b) Paper industry

(c) Food industry

(d) Hotels and Resorts

(xviii) Which of the following statements about community forestry is **TRUE**?

(a) It involves JFM, Social forestry, and Agro forestry.

(b) It does not involve local communities.

(c) It discourages innovative ideas and knowledge.

(d) It does not affect the life of the local people.

(xix) The agriculture sector is a valuable resource. This sector can become a Zero Percent Waste Generator by efficiently utilising its waste for:

(a) Biogas plant, Stubble burning

(b) Stubble burning, Paper manufacturing

(c) Paper and board manufacturing, Biogas plant

(d) Biofuel production, Stubble burning

(xx) Which of the following is **NOT** an indigenous method of rainwater harvesting?

(a) Kund

(b) Temple pond

(c) Roof top rainwater harvesting

(d) Johad

Question 2

(i) Give *any two* causes of soil erosion. [2]

(ii) Mention *any two* effects of recession due to globalisation. [2]

(iii) What is meant by watershed? Give *any two* reasons why watershed management is important. [3]

(iv) Identify the image given below and mention *two* benefits of this structure. [3]



Question 3

(i) With reference to industrial waste, write *any two* differences between *effluent* and *emission*. [2]

(ii) Give *any two* advantages of check dams. [2]

(iii) Mention *any three* advantages of Indigenous weaving. [3]

(iv) Discuss *any three* benefits of practising the 3Rs (Recycle, Reduce, Reuse). [3]

SECTION B (60 Marks)

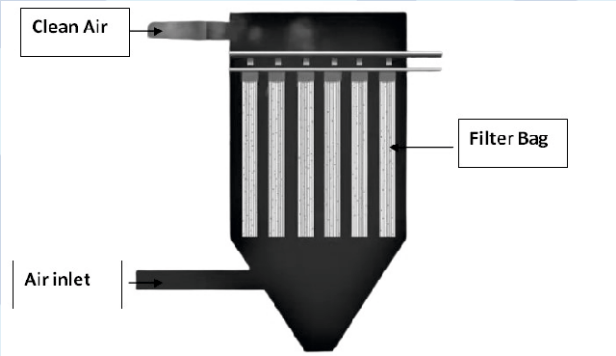
*(Answer **any four** questions from this **Section**.)*

Question 4

(i) Continuous unplanned deforestation is leading to many natural calamities. Explain how JFM and community forestry help to control deforestation. [5]

(ii) A huge number of developmental projects in a city leads to environmental degradation. It specially affects the agriculture sector because of deforestation and soil erosion.
Describe *any five* ways how soil erosion affects food productivity. [5]

(iii) Identify the image given below and explain the working principle. [5]



Question 5

(i) Curitiba Traffic Management System of Brazil is known worldwide for its innovative and sustainable traffic management system.
Explain *any five* key features of *Curitiba Traffic Management System*. [5]

(ii) Globalisation is imposing many positive and negative impacts on our resources.
Explain *any five* impacts of globalisation on the human resource. [5]

(iii) TBS is an active NGO working for the benefit of people and the environment.
Briefly explain *any five* key aspects of Tarun Bharat Sangh's (TBS) work. [5]

Question 6

(i) Explain solar energy. Give *any two* advantages and *any two* disadvantages of solar energy. [5]

(ii) Every single step matters and can make a visible change. [5]
In reference to the above statement, each and every individual can take initiatives to restore the environment. Discuss *any five* initiatives taken by you to upgrade the environment.

(iii) Explain *any five* reasons for recycling wastewater. [5]

Question 7

(i) Environment Impact Assessment (EIA) is very important for the big developmental projects, to maintain balance in the ecosystem. Discuss the *two* stages and the process involved in EIA. [5]

(ii) What are *Euro norms*? Describe *any four* limitations of implementing Euro norms in India. [5]

(iii) Explain *any five* advantages of small dams. [5]

Question 8

(i) Leaching of toxins from landfills is a great threat to our water bodies because toxins from the leachate also deplete our underground water. [5]
Suggest *any five* efficient methods of waste disposal which do not degrade our natural resources.

(ii) Explain *Sustainable Development*. Describe *any three* characteristics principles of sustainability. [5]

(iii) Promotion of small-scale industries is bringing tremendous changes in the villagers' life. [5]



With reference to the above statement, explain Dastkar.

Question 9

(i) Economic policies play an important role in controlling air pollution. [5]
Discuss *any five* economic policies which help in controlling air pollution.

(ii) Sapna is a social worker who works for the welfare of women. Explain *any five* ways in which Sapna can uplift the women of the community. [5]

(iii) Discuss *any five* modern fishing techniques which are used for commercial purposes. [5]

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2026

ENVIRONMENTAL APPLICATIONS

Maximum Marks: 100

Time allowed: Two hours

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SECTION A (40 Marks)

*(Attempt **all** questions from this **Section**.)*

Question 1

Choose the correct answers to the questions from the given options. [20]

(Do not copy the questions, write the correct answers only.)

(i) The Ramsar Convention is an important international treaty to conserve:

(a) wastelands

(b) mountains

(c) wetlands

(d) ground water

(ii) The picture given below is of a Panchayat. This is an excellent example of:



(a) centralised governance

(b) decentralised governance

(c) state government

(d) local government

(iii) Many software engineers accepted jobs in other countries. What is the impact of their decision on India?

(a) Recession for India

(b) Brain drain for India

(c) No impact on India's economy

(d) Increase in foreign investment in India

(iv) Identify the major reasons for desertification from the following:

1. Overuse of chemical fertilisers and pesticides
2. Crop rotation
3. Afforestation
4. Overgrazing

(a) 1 and 4

(b) 1 and 2

(c) 2 and 3

(d) 3 and 4

(v) Which air pollution control device can reduce Sulphur emission?

(a) Cyclone separator

(b) Electrostatic precipitator

(c) Fluidised bed combustion

(d) Bag filter

(vi) The current chairperson of *Dastkar* is:

(a) Mirra Alfassa

(b) Dr. Kousalya Devi

(c) Dr. Soundram

(d) Laila Tyabji

(vii) Activated Sludge is a _____ process.

(a) biochemical

(b) physical

(c) biological

(d) chemical

(viii) **Assertion (A):** Crop rotation restores soil fertility.

Reason (R): Different crops need different nutrients.

(a) (A) is true and (R) is false.

(b) (A) is false and (R) is true.

(c) Both (A) and (R) are true and (R) is the correct explanation of (A).

(d) Both (A) and (R) are true but (R) is not the correct explanation of (A).

(ix) The Taj Trapezium Zone of India has a total area of _____ sq.km.

(a) 10,400

(b) 12,400

(c) 14,400

(d) 15,400

(x) Penalties for air pollution in India refer to the_____.

(a) taxes paid by a person

(b) reduction in tax

(c) discounts offered after obeying pollution laws

(d) punishment incurred on a polluter

(xi) **Assertion(A):** Indigenous methods of fishing are ecofriendly and maintain a balance in the aquatic ecosystem.

Reason(R): Indigenous methods do not disturb the food chain by overfishing or catching non-target fishes.

(a) (A) is true and (R) is false.

(b) (A) is false and (R) is true.

(c) Both (A) and (R) are true and (R) is the correct explanation of (A).

(d) Both (A) and (R) are true but (R) is not the correct explanation of (A).

(xii) Given below is a logo of an international convention. This convention was introduced to _____.



(a) conserve wetlands

(b) control transboundary movement of hazardous waste

(c) reduce greenhouse gases

(d) protect the ozone layer

(xiii) Natural Resource Accounting (NRA) deals with _____.

(a) counting of the number of trees in the forest

(b) managing the data on the animals

(c) measuring and valuing natural resources

(d) calculation of pollution levels

(xiv) Identify the traditional water conservation systems seen in Rajasthan.

1. Johad
2. Eri
3. Kund
4. Percolation pit

(a) 1 and 2

(b) 1 and 3

(c) 3 and 4

(d) 1 and 4

(xv) _____ means the use of natural resources which meets the needs of the present generation without compromising the needs of the future generation.

(a) National development

(b) Urban development

(c) Sustainable development

(d) Rural development

(xvi) Which of the following statements about *Environmental Impact Assessment (EIA)* is **APPROPRIATE**?

(a) EIA is a quick method.

(b) The cost of EIA process is low.

(c) EIA does not require the cooperation of the local people.

(d) EIA helps in reducing negative impacts of the project.

(xvii) Which of the following statements is **TRUE** regarding the role of local people in Joint Forest Management (JFM) in India?

(a) Local people act as the guardians of the forest.

(b) Local people cannot collect forest products.

(c) Local people destroy the forest.

(d) Local people are not involved in the conservation programme.

(xviii) Which of the following is an example of indigenous knowledge?

(a) Modern farming techniques

(b) Satellite weather forecasting

(c) Genetic engineering of crops

(d) Handloom weaving

(xix) The main gases produced by landfills are:

(a) Methane and ethane

(b) Methane and carbon dioxide

(c) Hydrogen sulphide and carbon monoxide

(d) Ethane and sulphur dioxide

(xx) Which of the following is **NOT** a modern method of water harvesting?

(a) Borewells

(b) Kunds

(c) Percolation pits

(d) Recharge trenches

Question 2

(i) What is meant by *End-of-pipe treatment*? [2]

(ii) *The western coastal region and parts of the northern coastal areas of India are highly vulnerable to soil erosion.* [2]

In this context, discuss *any two* consequences of soil erosion.

(iii) *Dry Compost Toilets are an alternative to the existing sewage system.* [3]

State *any three* benefits of DCT.

(iv) Observe the picture given below and name the *soil conservation strategy*. [3]

State *two* reasons why this strategy is useful to the farmers.



Question 3

(i) Mention *any two* objectives of Gandhigram. [2]

(ii) *Biodegradable waste is beneficial for the environment.* [2]
Give *two* reasons to support this statement.

(iii) State *three* basic steps involved in effluent treatment plant. [3]

(iv) Mention *any three* initiatives you can take to conserve water resources in your locality. [3]

SECTION B (60 Marks)

*(Answer **any four** questions from this **Section**.)*

Question 4

(i) Observe the picture given below and answer the questions that follow: [5]



(a) Identify the waste disposal method shown in the figure above.

(b) Explain *any four* best practices to tackle the issue mentioned by you in (a).

(ii) Explain *any five* alternatives to fuelwood to save the environment. [5]

(iii) Give *any five* reasons for the treatment of wastewater before it is discharged in the environment. [5]

Question 5

(i) *Air pollution control devices help to reduce air pollution effectively.* [5]
In this context, describe the working principle of wet scrubbers.

(ii) Discuss *any five* reasons to justify that globalisation is affecting our natural resources. [5]

(iii) Given below are images of the monuments falling under *Taj Trapezium Zone (TTZ)*. [5]



Discuss *any five* rulings given by the Supreme Court of India *to protect our monuments* under TTZ.

Question 6

(i) What is rooftop rainwater harvesting? Discuss *any three* reasons why we should conserve rainwater. [5]

(ii) *Technologies are creating a great impact in restoring our natural resources.* [5]
Give a brief account of *five* such technologies which help to save our natural resources.

(iii) Discuss *any five* strategies to conserve soil to prevent generation of waste land. [5]

Question 7

(i) Suggest *any five* modern techniques to improve traffic management in India. [5]

(ii) *Conducting Environmental Impact Assessment (EIA) is necessary for the big projects in India.* [5]

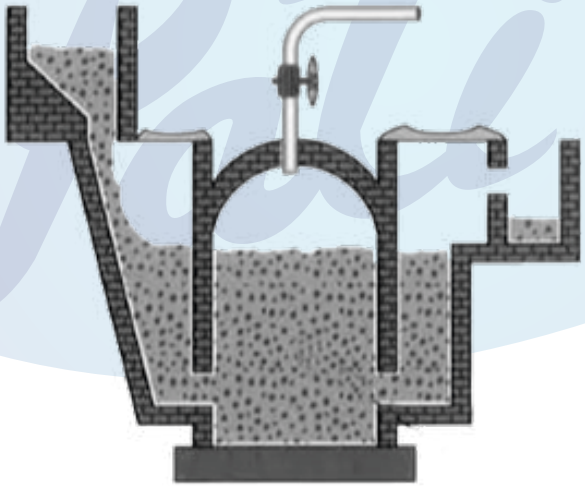
In this context, explain EIA. Mention *any two* advantages and *any two* disadvantages of EIA.

(iii) *A watershed includes both the physical and the biological features of the land and the water bodies it contains.* [5]

Briefly explain *five* objectives of watershed management.

Question 8

(i) Observe the structure shown in the diagram given below. [5]



(a) Name the structure shown above.

(b) Describe the working of the structure mentioned by you in (a) above.

(c) List *two* advantages of this structure.

(ii) *Mahatma Gandhi promoted Khadi as a symbol of the Swadeshi Movement in India.* As a young citizen of India, write *any five* reasons for promoting Khadi. [5]

(iii) Discuss *any five* objectives of sustainable development. [5]

Question 9

(i) *Many international, national and local NGOs are working in different areas to improve the condition of the environment.* [5]

State *five* measures taken by NGOs towards environmental protection.

(ii) *The global demand for remote sensing satellites has increased substantially overtime.* [5]

Describe *any five* reasons why remote sensing satellites are considered such an important tool.

(iii) Panchayati Raj system was introduced to empower the villagers of rural India. [5]

Discuss *any five* functions of Panchayat.

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2025 - Improvement

ENVIRONMENTAL APPLICATIONS

Maximum Marks: 100

Time allowed: Two hours

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SECTION A (40 Marks)

*(Attempt **all** questions from this **Section**.)*

Question 1

Choose the correct answers to the questions from the given options. [20]

(Do not copy the questions, write the correct answers only.)

(i) Identify the region where rainwater is collected and drained through a common point:

(a) River

(b) Creek

(c) Waterfall

(d) Watershed

(ii) A waste disposal method which generates an ecofriendly fuel:

(a) Composting

(b) Landfills

(c) Open dumping

(d) Recycling

(iii) Identify the set of biodegradable waste from the following options:

(a) fruit peels, polythene, potato

(b) leaves, vegetable, fruit peels

(c) vegetables, books, iron chair

(d) copies, glass window, leaves

(iv) Select the correct pair:

(a) Burning of fuel wood - Cholera

(b) Borewell - Indigenous method of rainwater harvesting

(c) Biomedical waste - Open dumping

(d) DCT - An alternative to existing sewage system

(v) An example of Clean Energy is:

(a) Petrol

(b) Hydrogen

(c) Coal

(d) Diesel

(vi) Hydroelectricity **cannot** be generated by:

(a) Small dam

(b) Check dam

(c) Micro dam

(d) Mini dam

(vii) Which of the following statement is **TRUE** about the impact of the depletion of natural resources:

(a) It will help in the developmental processes

(b) Lack of resources for the future generation

(c) Increase in Gross Domestic Product (GDP)

(d) Increased production in the agriculture sector

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(viii) Which of the following is a conventional source of energy?

(a) Wind

(b) Sun

(c) Petroleum

(d) Tide

(ix) **Assertion (A):** Remote sensing satellite is a very good tool which can collect information about the earth's surface, using sensor.

Reason (R): The frequency of data collection is very fast as it covers large area in a short duration of time.

(a) (A) is true but (R) is false.

(b) (A) is false but (R) is true.

(c) (A) and (R) are true and (R) explains (A).

(d) (A) and (R) are true but (R) is not the correct explanation of (A).

(x) Which of the following are eco-friendly technologies?

1. Solar cooker
2. E-vehicle
3. Petrol engine
4. Thermal power plant

(a) 1 and 3

(b) 2 and 4

(c) 1 and 2

(d) 3 and 4

(xi) **Assertion (A):** Basel Convention helps in controlling of transboundary movements of hazardous waste and their disposal.

Reason (R): Basel Convention helps to protect human health and environment.

(a) (A) and (R) are true and (R) explains (A).

(b) (A) and (R) are true but (R) is not the explanation of (A).

(c) (A) is false but (R) is true.

(d) (A) is true but (R) is false.

(xii) An image of hydroelectricity generation is shown below:



The source of hydroelectricity is:

(a) Falling water

(b) Turbine

(c) Generator

(d) Dam

(xiii) Natural Resources Accounting (NRA) refers to:

(a) Accounting of renewable resources

(b) Accounting of only non-renewable resources

(c) Accounting of natural resources ignoring their ecological value

(d) Accounting and assessing the depletion and degradation of natural resources over time.

(xiv) Which of the following statement is **incorrect** with reference to *appropriate technology*?

(a) It is affordable and easy to use.

(b) It fits the needs of local people and resources.

(c) It is a highly advanced technology.

(d) It helps to protect the environment and community.

(xv) Select the correct sequence of the steps followed in Environmental Impact Assessment (EIA).

1. Mitigation
2. Reporting
3. Screening
4. Decision making

(a) 3, 2, 1, 4

(b) 1, 3, 4, 2

(c) 2, 1, 3, 4

(d) 3, 1, 2, 4

(xvi) The objective of Ramsar Convention is to:

(a) Reduce transboundary movement of hazardous waste

(b) Prevent the international trade of the endangered species of flora and fauna

(c) Protect and conserve biodiversity

(d) Protect and conserve the wetlands

(xvii)



The picture given above shows aliquid coming out of the garbage heap after rainwater falls on it. Name the liquid.

(a) Rain acid

(b) Run-off

(c) Leachate

(d) Sewage

(xviii) Identify the type of waste which may cause genetic and somatic variations in humans:

(a) E-waste

(b) Mining waste

(c) Radioactive waste

(d) Biomedical waste

(xix) The deposition of eroded soil at the bottom of aquatic bodies is called:

(a) Leaching

(b) Weathering

(c) Siltation

(d) Glaciation

(xx) In the term North-South divide, South Means:

(a) Developed countries

(b) Developing countries

(c) Australia

(d) India

Question 2

(i) What is *sustainable development*? [2]

(ii) What type of waste is treated biologically and how? [2]

(iii) List *any three* methods to prevent generation of wastelands. [3]

(iv) Give *any three* advantages of village community based self-sufficient growth. [3]

Question 3

(i) Write *any two* natural causes of soil erosion. [2]

(ii) What is *recession*? [2]

(iii) State *any three* limitations of End Of Pipe (EOP) treatment. [3]

(iv) [3]



Study the picture given above of a waste treatment plant.

(a) Identify the waste treatment method.

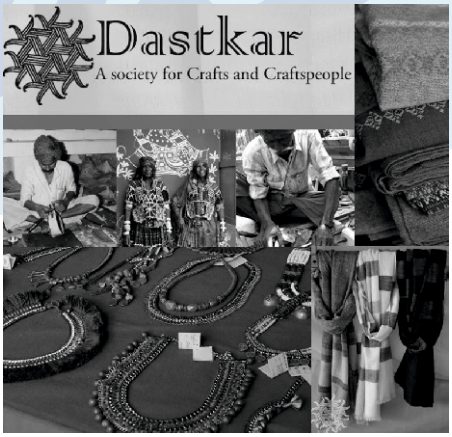
(b) State *any one* advantage and *any one* disadvantage of this method.

SECTION B (60 Marks)

*(Answer **any four** questions from this **Section**.)*

Question 4

(i) Study the image given below and answer the questions that follows: [5]



(a) Who is the founder of Dastkar?

(b) Discuss *any four* points how initiatives like Dastkar help in preserving traditional Indian crafts.

(ii) Name *any three* soil conservation strategies. Give *any two* reasons for soil conservation. [5]

(iii) The Taj Trapezium Zone (TTZ) is a designated area around the Taj Mahal to protect this UNESCO World Heritage site and other monuments from pollution and environmental degradation. [5]

(a) Name the *other two* monuments located in the TTZ apart from the Taj Mahal.

(b) Mention *any three* key regulatory measures that have been implemented in the TTZ to mitigate pollution and protect the Taj Mahal.

Question 5

(i) (a) Name the air pollution device which works on the principle of mechanical filtration. [5]

(b) Describe the working of the device you have named in (a) above.

(ii) *Forests are rapidly disappearing to meet the growing demands of National development. To save the forests several alternatives are being used for fuel wood and for furniture industry.* [5]

Give *any five* reasons for forest conservation.

(iii) *Panchayati Raj is a system of governance in which gram panchayats are the basic units of administration.* [5]

List *any five* functions of Panchayat for the village development.

Question 6

(i) (a) Name *any two* rainwater harvesting techniques used in Rajasthan. [5]

(b) Describe the structure of *any one* rainwater harvesting technique of Rajasthan.

(ii) Name the founders of Gandhigram. Mention *any three* objectives of Gandhigram. [5]

(iii) *Community forestry is a branch of forestry that plays a significant role in forest management and land use decisions.* [5]

In this context, mention *any five* way s in which community forestry is helping the local people.

Question 7

(i) A lot of water gets wasted due to flush system in toilets. One of the methods to save water is Dry Compost Toilet. Explain the working of Dry Compost Toilet. [5]

(ii) Chennai faces severe water shortage due to draught and over dependence on groundwater. To tackle this problem, the city initiated large scale wastewater recycling to meet industrial and non potable water needs. In this context, state *any five* benefits of water recycling. [5]

(iii) In rural parts of India, *check dams* and *bunds* are very common practices. [5]

(a) What is a check dam?

(b) Write *any three* advantages of contour bunds.

Question 8

(i) Enlist *any five* ways to achieve sustainability in a developing country like India. [5]

(ii) What is grass root planning? State *any three* advantages of it. [5]

(iii) (a) Name *any two* major sectors where Environmental Impact Assessment (EIA) is mandatory. [5]

(b) State *any three* roles of EIA.

Question 9

(i) Globalisation has made India a significant exporter of textiles and garments, catering to markets in Europe, USA and South East Asia. [5]
State *any five* impacts of Globalisation on developing countries.

(ii) Mr. Agarwal has shifted in a housing complex with his family. He has noticed one open dumping area beside his house and has become concerned. In this context, discuss *any five* impacts of waste accumulation. [5]

(iii) [5]



The picture above shows the harnessing of renewable resources of energyList *any three* advantages and two disadvantages of using this type of renewable source of energy.

ICSE ACADEMY

2025

ENVIRONMENTAL APPLICATIONS

Maximum Marks: 100

Time allowed: Two hours

1. *Answers to this Paper must be written on the paper provided separately.*
2. *You will **not** be allowed to write during the first **15** minutes.*
3. *This time is to be spent in reading the question paper.*
4. ***The time given at the head of this Paper is the time allowed for writing the answers.***

5. *Attempt **all** questions from **Section A** and **any four** questions from **Section B.***
6. *The intended marks for questions or parts of questions are given in brackets[ ].*

Instruction for the Supervising Examiner

Kindly read aloud the Instructions given above to all the candidates present in the Examination Hall.

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ICSE ACADEMY

SECTION A (40 Marks)

*(Attempt **all** questions from this **Section**.)*

Question 1

Choose the correct answers to the questions from the given options. [20]

(Do not copy the questions, write the correct answers only.)

(i) The main objective of the *Ramsar Convention* is to:

(a) Protect the water bodies

(b) Conserve freshwater resources

(c) Conserve wetlands

(d) Construct wetlands

(ii) In one half of the given picture, we can see a distinct discolouration of the Taj Mahal. Identify the main cause of the discolouration of this monument:



(a) Chloro-Fluro Carbon gas

(b) Smog

(c) Acid rain

(d) Old age of this monument

(iii) *Tarun Bharat Sangh* had helped the local people of Rajasthan to make:

(a) Kunds

(b) Eris

(c) Khadin

(d) Johads

(iv) Rahul, on his birthday, gave some of his old clothes to an orphanage. The children at the orphanage were happy to get the clothes and used them.
This is an example of:

(a) Reduce

(b) Reuse

(c) Recycle

(d) Refuse

(v) Panchayati Raj is a system of governance in which gram panchayats are the basic units of administration. Select the appropriate statements regarding the functions of Panchayat:

1. Establishment of primary health centres and primary schools
2. Construction of large dams
3. Development of small and cottage industries
4. Construction of National highways

(a) 1 and 2

(b) 2 and 4

(c) 3 and 4

(d) 1 and 3

(vi) In the term *North-South* divide, North means:

(a) Developed countries

(b) Developing countries

(c) European countries

(d) United States of America

(vii) **Assertion (A):** Remote Sensing satellite is a good tool and a useful source for gathering environmental information of earth's atmosphere, ocean and land.

Reason (R): It can provide detailed information on landforms, air quality, rate of deforestation and cyclone.

(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 and (R) is false.

(d) (A) is false and (R) is true.

(viii) Identify the type of vehicle from the image given below:



(a) Diesel vehicle

(b) Bio-diesel vehicle

(c) Electric vehicle

(d) Petrol vehicle

(ix) **Assertion (A):** Tree breaks play an important role in preventing soil erosion.

Reason (R): Deforestation leads to soil erosion.

(a) (A) and (R) are true and (R) is the correct explanation of (A).

(b) (A) and (R) are true but (R) is not the correct explanation of (A).

(c) (A) is false and (R) is true.

(d) (A) is true and (R) is false.

(x) Identify the correct pair.

(a) Dastkar – Laila Tyabji

(b) Gandhigram - Mirra Alfassa

(c) Khadi – Dr. Rajendra Singh

(d) Auroville – Dr. Soundram

(xi) Which of the following statements about Natural Resource Accounting (NRA) are **APPROPRIATE**?

1. NRA integrates environmental factors into national economic accounts.
2. NRA primarily focuses on the financial value of natural resources, ignoring their ecological value.
3. NRA helps in assessing the depletion and degradation of natural resources over time.
4. NRA is a tool used to measure the sustainability of a nation's economic growth.

(a) 1, 2 and 4

(b) 2, 3 and 4

(c) 1, 3 and 4

(d) 1, 2 and 3

(xii) Wind Energy _____.

(a) requires fuel

(b) requires wind farms that need very less area for installation

(c) is eco-friendly

(d) is available all the time

(xiii) Identify the technology employed by the native inhabitants of a country.

(a) Modern technology

(b) Appropriate technology

(c) Indigenous technology

(d) Digital technology

(xiv) What is the primary goal of recharging ground water aquifers?

(a) To store water in tanks for later use.

(b) To restore ground water level by increasing infiltration.

(c) To transport water across regions.

(d) To irrigate crops using underground pipelines.

(xv) Which of the following statements about *National Debt* is **TRUE**?

(a) National debt is the total amount of money borrowed by a country's government that must be repaid.

(b) National debt includes the money borrowed by industrialists of a country.

(c) National debt has no impact on the country's economy.

(d) National debt is always considered a negative factor for a country's development.

(xvi) Identify the **INCORRECT** statement with reference to water recycling.

(a) It helps to reduce the demand for fresh water.

(b) Recycled water can be used for drinking purposes.

(c) It helps to conserve natural ecosystems by reducing water extraction.

(d) Treated wastewater can be reused for agricultural purposes.

(xvii) *Run-off River system* is an eco-friendly technology for generating hydro-electricity. State the correct sequence of steps for generation of electricity using Run-off River System.

1. Penstock
2. Weir
3. Generator
4. Turbine
5. River

(a) 5, 4, 2, 1, 3

(b) 2, 3, 5, 4, 1

(c) 2, 1, 4, 3, 5

(d) 1, 2, 4, 3, 5

(xviii) What is a common method to *reuse organic waste* from homes and restaurants?

(a) Composting to create nutrient-rich soil

(b) Incinerating the waste

(c) Packaging the waste for landfill disposal

(d) Diluting and releasing the waste into water bodies

(xix) Identify the alternate fuel which is produced from waste materials:

(a) Biogas

(b) Hydrogen

(c) Compressed Natural Gas

(d) Liquid Petroleum Gas

(xx) Which of the following human activities does **NOT** contribute to soil erosion?

(a) Deforestation

(b) Overgrazing by livestock

(c) Planting trees

(d) Building roads

Question 2

(i) Suggest *any two* methods to prevent *siltation* in waterways. [2]

(ii) How can lane management manage the traffic effectively? [2]

(iii) State *any three* reasons for rainwater harvesting in metropolitan cities. [3]

(iv) Mention *any three* limitations of the usage of conventional sources of energy in power sector. [3]

Question 3

(i) Mention *any two* economic strategies to reduce air pollution. [2]

(ii) *Hybrid vehicles are new age vehicles*. Why are they called hybrid? Give *one* example of a hybrid vehicle. [2]

(iii) [3]



Study the image of a Landfill given above.

Identify *any three* potential environmental impacts of this waste treatment practice.

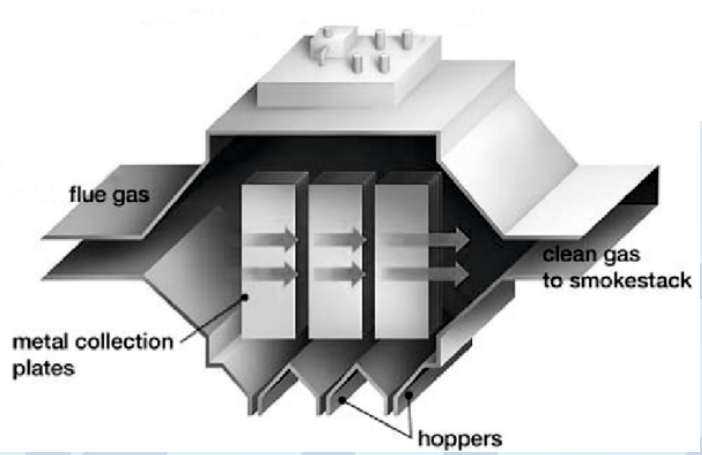
(iv) *Women's rights are necessary for gender equality and women empowerment.* [3]
Mention *any three* roles of NGOs fighting for Women's rights.

SECTION B (60 Marks)

*(Answer **any four** questions from this **Section**.)*

Question 4

(i) [5]



(a) Identify the air pollution control device shown above.

(b) Explain the function of the device in reducing air pollution.

(c) Describe how the device works.

(ii) A school in a remote area is planning to install a Dry Compost Toilet (DCT), as the school has limited access to water. The school 's gardener plans to use the compost produced in the school garden. [5]

(a) Explain how a DCT works.

(b) Write *any two* benefits of the compost produced in the toilets to the school garden.

(iii) Delhi is the city with the highest pollution level in India. Explain *any five* measures taken by the concerned authorities to reduce air pollution in the city. [5]

Question 5

(i) Deforestation is occurring at an alarming rate, causing environmental problems. Suggest *any five* methods to combat deforestation. [5]

(ii) *Increase in Gross Domestic Product (GDP) will bring about economic growth and this in turn will reduce poverty.* [5]

Analyse, why higher GDP and economic growth might not always result in poverty reduction.

(iii) State *any five* initiatives that can be taken by you to conserve energy and natural resources. [5]

Question 6

(i) Explain *any five* ways in which globalisation will help a developing country like India. [5]

(ii) Cyclone Phailin (2013) was one of the strongest storms to hit India. Remote Sensing Satellite (RSS) helped in saving lives of over 1 million people who were evacuated from coastal areas. [5]

Explain *any five* ways how Remote Sensing Satellite (RSS) lowers the death toll.

(iii) An Effluent Treatment Plant is designed to treat wastewater from a manufacturing facility before it is discharged into the environment. [5]

(a) Name the *three* key steps in an Effluent Treatment Plant.

(b) State the impact on the second step of an Effluent Treatment Plant if its first step does not function properly.

Question 7

(i) Thanjavur District, known as the *'Rice Bowl of Tamil Nadu'*, has an extensive network of Eris. [5]

(a) What is *Eri system*?

(b) Explain *any three* benefits of the Eri system in rice cultivation of Thanjavur.

(ii) *Curitiba is often described as the most sustainable city in the world. It is largely a result of work by the visionary planner the Mayor Jamie Lerner , who gave highest priority to the traffic management of Curitiba.* [5]



Mention the different types of buses used in Curitiba as shown in the image above.

(iii) *Wetlands are highly productive ecosystem and maintain the ecological balance.* [5]
With reference to the statement, mention *any five* importance of wetlands.

Question 8

(i) *Kanchipuram weaving industry incorporates both traditional techniques and modern technologies.* In this context state: [5]

(a) *Any three* advantages of Indigenous weaving.

(b) *Any two* advantages of modern mechanised weaving.

(ii) What is the scope of alternative sources of energy in addressing current environmental challenges? Name *any two* specific alternative energy sources. [5]

(iii) *Consider a proposed large scale infrastructure project, such as the construction of a new highway, which requires Environmental Impact Assessment (EIA).* [5]

Write *any five* roles that EIA can play in this project.

Question 9

(i) [5]



A city is considering building a waste incineration plant (as shown in above image) to manage its growing waste problem. However, some residents are concerned about the environmental and health impacts of burning waste.

(a) Explain how incineration works as a waste management technique.

(b) Describe *any two* potential benefits of incineration plant.

(c) Discuss *any two* environmental and health concerns associated with waste incineration.

(ii) Auroville is a township founded in 1968 in Tamil Nadu, where people from all nations live together in harmony. [5]

(a) What are the *two* key ideals of Auroville?

(b) How does Auroville contribute to such ideals?

(iii) *Check dams have transformed Ralegaon Siddhi, a village in Maharashtra.* [5]

Explain *any five* ways by which check damshave changed the lives of the villagers of *Ralegaon Siddhi*.

ICSE ACADEMY

2024

ENVIRONMENTAL APPLICATIONS

Maximum Marks: 100

Time allowed: Two hours

Answers to this Paper must be written on the paper provided separately.

*You will **not** be allowed to write during the first **15** minutes.*

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

*Attempt **all** questions from **Section A** and **any four** questions from **Section B.***

The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A (40 Marks)

*(Attempt **all** questions from this **Section**.)*

Question 1

Choose the correct answers to the questions from the given options. [20]

(Do not copy the questions, write the correct answers only.)

(i) Removal of top fertile layer of soil by external agents:

(a) Soil pollution

(b) Soil corrosion

(c) Soil erosion

(d) Soil restoration

(ii) Auroville was founded by:

(a) Mirra Alfassa

(b) Sri Aurobindo

(c) Suhasini Ayer

(d) Anna Hazare

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(iii) The alternative to timber in building industry:

(a) Oak

(b) Hemp

(c) Papyrus tree

(d) Recycled timber

(iv) An air pollution control device to remove acidic gaseous pollutants:

(a) Electrostatic precipitator

(b) Wet scrubber

(c) Cyclonic separator

(d) Fluid bed combustion

(v) Which of the following is an effect of brain drain?

(a) National debt

(b) Loss of human capital

(c) Recession

(d) Economic disparity

(vi) One of the modern methods of rainwater harvesting system practiced in cities is:

(a) Check dams

(b) Kunds

(c) Tanka

(d) Roof top water harvesting

(vii) According to Gandhiji, villages become self-sufficient by:

(a) Adopting lavish lifestyle

(b) Establishing large scale industries

(c) Establishing small scale cottage industries

(d) Distributing surplus lands to landlords

(viii) An ecofriendly, hand spun and woven fabric of India is _____.

(a) Terricot

(b) Khadi

(c) Polyester

(d) Rayon

(ix) Dr. G. Rama Chandran and Dr. Soundram were the founders of _____.

(a) Khadi industry

(b) Dastkar

(c) Gandhigram

(d) Gram Swaraj

(x) An example of decentralized governance is:

(a) District

(b) Panchayat

(c) State

(d) Tehsil

(xi) Effluent is the term for:

(a) Waste gases

(b) Solid waste

(c) Wastepaper

(d) Wastewater

(xii) Medical waste should be:

(a) Incinerated

(b) Reused

(c) Recycled

(d) Composted

(xiii) **Assertion (A):**

Natural Resource Accounting is a process of estimating the values of natural resource depletion and degradation due to economic activities.

Reason (R):

It is a means of demonstrating linkage between the environment and the economy.

(a) A is false but R is true.

(b) A is true but R is false.

(c) A and R are true, and R explains A.

(d) A and R are true, but R is not the explanation of A.

(xiv) The planning of Curitiba city is done giving highest priority to:

(a) Public transport system

(b) Industrial development

(c) Urban development

(d) Smart city development

(xv) Check dams are meant to:

A. Generate hydroelectricity

B. Conserve water

C. Conserve soil

D. Act as a shelter belt

(a) A

(b) A and B

(c) B and C

(d) C and D

(xvi) The hydroelectric generation system without storing water:

(a) Large dam

(b) Run of river system

(c) Small dam

(d) Check dam

ICSE ACADEMY

(xvii) The method of waste management which makes recycling of waste easier:

(a) Open dumping

(b) Landfills

(c) Incineration

(d) Segregation

(xviii) The process used to assess the significant effects of a proposed project on the environment:

(a) Natural resource accounting

(b) Green accounting

(c) Environmental impact assessment

(d) Resource assessment

(xix) Water shed is a surface area that channels _____ to a common point.

(a) ground water

(b) rainwater

(c) drained water

(d) wetlands

(xx) The main objective of the _____ Convention is to protect human health and the environment against the adverse effects of "hazardous waste".

(a) Ramsar

(b) Marpol

(c) Geneva

(d) Basel

Question 2

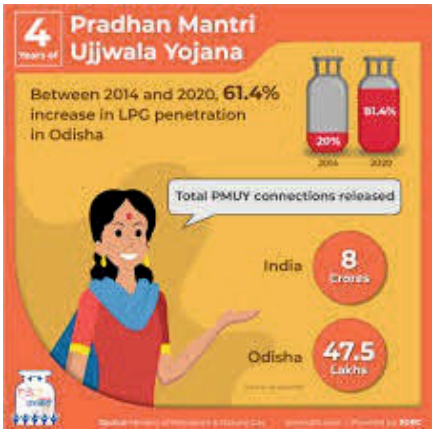
(i) Name *any two* alternative fuels that reduce emission from vehicle. [2]

(ii) What are tree brakes? Write *any one* advantage of it. [2]

(iii) What do you mean by leachate? Mention its impact on the environment. [3]

ICSE ACADEMY

(iv) The picture given below is the poster for free LPG connection for rural women under the Prime Minister's Ujjwala Yojana. Why was this yojana started? *(Give any three points)* [3]



Question 3

(i) What is Eri? [2]

(ii) Incineration is advantageous. State *any two* reasons. [2]

(iii) State *any three* applications of Remote Sensing Satellite. [3]

(iv) How do wetlands control floods? [3]

SECTION B (60 Marks)

*(Answer **any four** questions from this **Section**.)*

Question 4

(i) Observe the picture given below. [5]



"One of the reasons of air pollution is traffic congestion". Describe *any five* measures to reduce the traffic congestion.

(ii) Overgrazing is one of the factors of soil erosion. Mention *any five* methods to prevent overgrazing. [5]

(iii) What is JFM? Explain its role in the conservation of Forest. *(Any three points)* [5]

Question 5

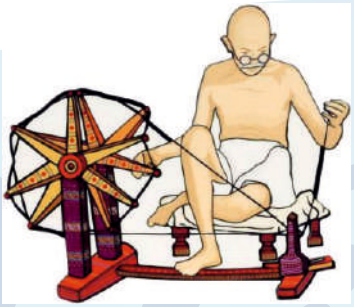
(i) Name the air pollution control device which works on the principle of centrifugal force. Explain its working. [5]

(ii) What are Euro norms? State *any three* limitations of implementing these norms in India. [5]

(iii) "Before starting a mega project like dam, power plant etc. Environment Impact Assessment (EIA) is mandatory".
Briefly describe the various steps involved in conducting EIA. [5]

Question 6

(i) Study the picture and answer the questions that follow: [5]



(a) Is it a modern or indigenous practice?

(b) Name the cloth made from this yarn.

(c) Why did Gandhiji introduce 'charkha' to Indian people?

(d) State *any two* advantages of the cloth material made from this process.

(ii) Tarun Bharat Sangh revived the lost river and brought greenery in Alwar, Rajasthan. Explain *any five* initiatives taken by Tarun Bharat Sangh to solve the water issues in Rajasthan. [5]

(iii) Fuelwood is the main source of fuel in rural India. Mention *any five* impacts of burning fuel wood on rural women. [5]

Question 7

(i) Consumption of contaminated water with sewage and effluent is the root cause of many water borne diseases. Name the process that should be practiced to prevent the contamination of water. Mention *any four* advantages of the above mentioned process. [5]

(ii) NGO's work for various issues, one of them is Women and Child Welfare. [5]

(a) What is NGO?

(b) State *any three* ways by which NGO's work for Child's welfare.

(iii) More than 2,500 acres of near barren and visibly dying land have been transformed into a lush green area. Auroville has gained national and international acclaim for its wasteland reclamation and reforestation work. List *any five* sustainable practices adopted by Auroville. [5]

Question 8

(i) To restore the beauty of Taj Mahal, Government of India has taken several measures. One of the measures is directing the Mathura oil refinery to reduce the pollutant gases from the plant.
Mention *any four* steps taken by Mathura oil refinery to reduce the air pollutants. [5]

(ii) Is coal a conventional or non-conventional source of energy? List *any four* limitations of using coal as a source of energy. [5]

(iii) What is an intermediate or appropriate technology? Mention *any three* ways how both the indigenous and modern technologies are practiced in fisheries. [5]

Question 9

(i) The picture shown below is about a movement against the construction of a big dam on river Narmada. [5]



Why do environmentalist usually protest the construction of big dams? *(Give any five points)*

(ii) Give an account of the bubble theory. [5]

(iii) Smart phones, Computers and Television are few examples of modern technology. Mention *any three* advantages and *any two* disadvantages of modern technology. [5]

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