

2nd Edition

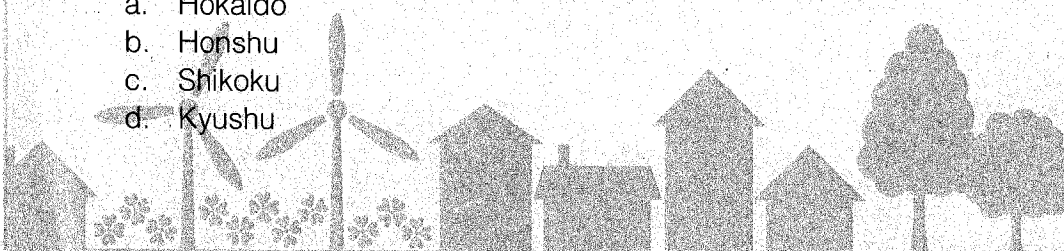
ENVIRO- CHALLENGE



The Energy and Resources Institute

Multiple-Choice Questions

1. Ants are involved in a symbiotic relationship with insects. While ants protect them from harm, they are in return provided with honeydew (plant sap) by the insects. Which are these insects?
 - a. Cockroaches
 - b. Aphids
 - c. Butterflies
 - d. Ladybirds
2. Tanning is a process by which raw animal hides are converted into leather. The leather is made resistant to biological decay by stabilizing the collagen structure of the hide. Name the type of cell which synthesizes collagen in animals.
 - a. Epithelial cells
 - b. Fibroblast
 - c. Nerve cells
 - d. Blood cells
3. Famous for their tusks that can grow up to 1 m in length, the males of this species have larger tusks than the females. They are found lazing around water bodies and they also have stiff bristles around their mouths forming moustaches. Another characteristic feature is the fat deposits, known as blubber, beneath their skin. Which is this animal?
 - a. Walrus
 - b. Koala bear
 - c. Orangutan
 - d. Ostrich
4. What term is used for the soil that settles in water?
 - a. Top soil
 - b. Sediment
 - c. Sand
 - d. Gravel
5. The 2011 earthquake in Japan caused a tsunami that killed more than 15,000 people and led to a nuclear crisis. It also shifted the earth on its axis and caused one of Japan's islands to move to the east by approximately 2.4 m. Which is this island?
 - a. Hokaido
 - b. Honshu
 - c. Shikoku
 - d. Kyushu



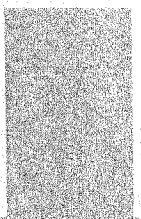
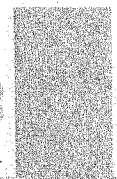
Enviro-Challenge

6. The Three Gorges Dam in China, completed in May 2006, is the world's largest hydropower project. Name the gorges that were flooded and filled due to the construction of the dam.
 - a. Qutang, Wu Xia, Xiling
 - b. Yangtze, Mekong, Qutang
 - c. Xiling, Yangtze, Mekong
 - d. Wu Xia, Lijiang, Mekong

7. Several initiatives are being taken to promote the practice of handwashing among children to improve their personal hygiene and health. The Global Handwashing Day is celebrated every year on which day?
 - a. 15 October
 - b. 2 October
 - c. 22 April
 - d. 5 June

8. Multipurpose dams were considered a boon as they provided electricity and irrigation water. However, they have an impact on the environment, and several protests world over are happening against the construction of these dams. Which was the first multipurpose river project in India?
 - a. Damodar Valley Project
 - b. Narmada Valley Project
 - c. Tehri Dam Project
 - d. Bhakra Nangal Dam Project

9. This 27,000 tonne decommissioned French warship was sailing to India to be broken up at the ship-breaking yard at Alang in Gujarat. After it received timely intervention and global attention, it was ordered to take a U-turn, and was suspended from entering the Indian coast. Name this ship.
 - a. *Le Clemenceau*
 - b. Santa Maria
 - c. Discovery
 - d. Beagle

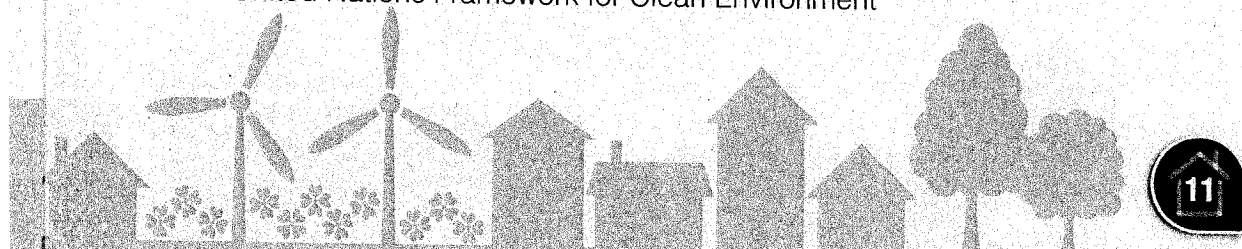


Multiple-Choice Questions

10. An oil well is a term for any perforation through the earth's surface designed to find and release both petroleum oil and gas hydrocarbons. Where was the first oil well drilled in India?

Hint: the name of the place is linked to the phrase 'dig, boy!' an encouraging remark to motivate labourers to continue digging.

- a. Digboi
 - b. Dikom
 - c. Dispur
 - d. Dibrugarh
11. Electricity generated from fossil fuels, such as coal and crude oil, to run industries leads to high concentrations of harmful gases in the atmosphere, causing ozone depletion and global warming. What does coal and oil have that their burning releases oxides into the atmosphere?
- a. Sulphur
 - b. Magnesium
 - c. Phosphorus
 - d. Lead
12. What is the byproduct which is produced by the process of coal combustion in a thermal power generation plant that has the potential to get airborne and pollute the atmosphere?
- Hint: this byproduct is being dumped as waste, despite having the potential to be used in the construction industry.
- a. Bygasse
 - b. Fly ash
 - c. Carbon dioxide
 - d. Sulphur dioxide
13. A 1992 convention provides a framework for the negotiation of detailed protocols on issues such as control over greenhouse gas emissions, particularly carbon dioxide, and deforestation. What is this convention called?
- a. United Nations Framework Convention on Climate Change
 - b. United Nations Policy Framework
 - c. United Nations Framework on Collective Responsibility for Climate Change
 - d. United Nations Framework for Clean Environment



Enviro-Challenge

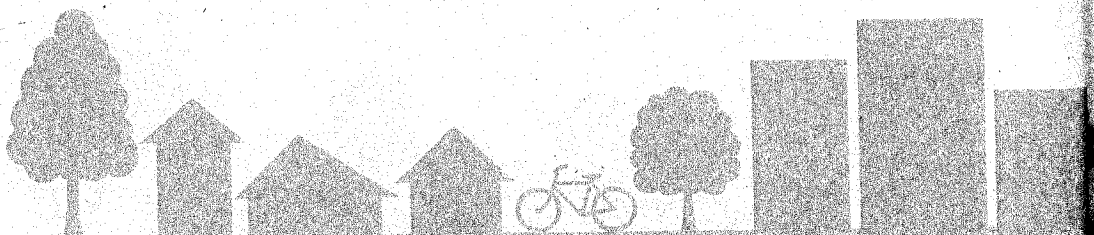
14. When is World Population Day celebrated?
 - a. 11 July
 - b. 5 June
 - c. 21 October
 - d. 14 November

15. This famine caused by blight of potato crop was experienced in 1845 in which of the following countries?
 - a. Ireland
 - b. Vietnam
 - c. North Korea
 - d. India

16. Which of the following is not yet a UNESCO World Heritage Site in India?
 - a. River Island of Majuli, Midstream of Brahmaputra River, Assam
 - b. Taj Mahal, Agra, Uttar Pradesh
 - c. Great Living Chola Temples, Thanjavur, Tamil Nadu
 - d. Sundarbans National Park, West Bengal

17. Which area in the Nanda Devi Biosphere Reserve in India harbours a population of many celebrated flowers like the Brahma Kamal, the Blue Poppy, and the Cobra Lily?
 - a. Valley of Flowers
 - b. Silent Valley
 - c. Serengeti Valley
 - d. None of the above

18. This international agreement between governments aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival. What is this agreement referred to as?
 - a. CITES
 - b. CITIES
 - c. SEDA
 - d. SITY



Multiple-Choice Questions

19. Biodiversity comprises ecosystems, species, and genetic material, along with variability within and among them. The United Nations has declared an International Day for Biological Diversity, to increase understanding and awareness about biodiversity issues. When is this day observed?
- 22 May
 - 5 June
 - 22 April
 - 2 October
20. These species cause destructive changes to an ecosystem and economy, and sometimes also destroy other species native to that ecosystem. What are these animal and plant species, found outside their native habitats, called?
- Invasive alien species
 - Native species
 - Eclyptic species
 - Extinct species
21. The passenger pigeon, the dodo, and the stegosaurus are examples of species that are no longer living on the earth. What are these species termed as?
- Extinct species
 - Active species
 - Volatile species
 - Threatened species
22. *Balaenoptera musculus* is the biggest animal on earth. The largest specimen ever recorded weighed approximately 187 tonne. What is this animal commonly known as?
- Blue whale
 - Asian elephant
 - One-horned rhinoceros
 - African bush elephant
23. Darwin's theory of evolution challenged the genesis account of special creation of species. It implied a continuity of humans and animals, of within-species and between-species variation, not only in body but in behaviour as well. According to Darwin's theory of evolution, differences between species may be a result of which of the following?
- The disuse of body structures
 - The transmission of acquired characteristics
 - Natural selection
 - Mutagenic agents

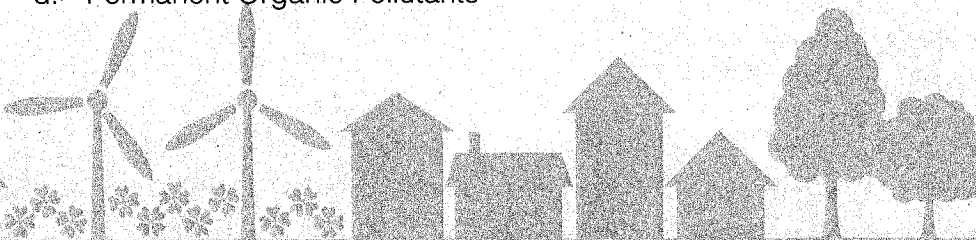
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24. What term is used to describe the harmonious integration of landscape and people, for providing food, energy, shelter, and other material and non-material needs in a sustainable way?
- Permaculture
 - Agriculture
 - Tissue culture
 - Floriculture
25. The lines on a weather map or synoptic chart are called isobars. What do they join?
- Wind speed
 - Places of equal temperature
 - Places of equal air pressure
 - Places having similar climate
26. Biomass materials can be used as renewable sources of energy to heat homes, cook food, and even produce electricity. Which of the following is not a biomass material?
- Forest debris
 - Crop residue
 - Manure
 - Coal
27. _____ is the heat generated by natural processes within the earth. The main energy resources are the hot rocks, magma, geysers, hot springs, and methane in the deep seabed.
- Geothermal
 - Hydel
 - Solar
 - Tidal
28. The Montreal Protocol was an international treaty designed to protect the ozone layer by phasing out the production of numerous substances believed to be responsible for ozone depletion. Which of the following organic compounds, also used as a refrigerant, a propellant, and a solvent, was decided to be phased out?
- Carbon monoxide
 - Chlorofluorocarbons
 - Hydrocarbons
 - Carbon dioxide



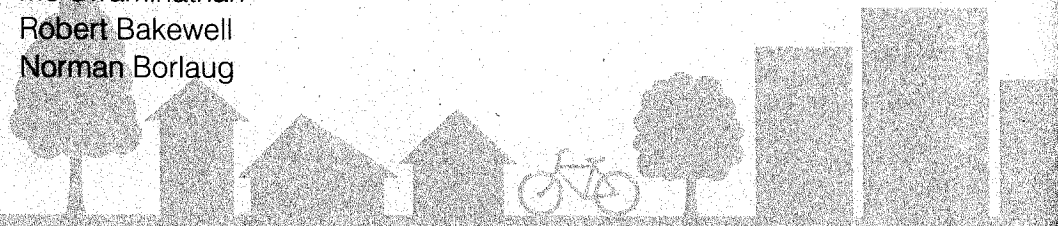
Multiple-Choice Questions

29. Under the National Air Quality Monitoring Programme (NAMP), which of the following air pollutants are monitored?
- SO₂, NO₂, SPM, and RSPM
 - CO, SO₂, NO₂, and SPM
 - CO, SO₂, NO₂, and RSPM
 - SO₂, NO₂, CO, and CO₂
30. SPM is an air pollutant that can cause several respiratory health problems in humans. It reduces visibility and leads to problems in commutation. What does SPM stand for?
- Solid Particulate Matter
 - Suspended Particulate Matter
 - Safe Particulate Matter
 - None of the above
31. Some greenhouse gases occur naturally in the atmosphere, while others result from human activities. Naturally occurring greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide, and ozone. Of the options given below, which gas is 20 times more effective in trapping heat in the atmosphere than carbon dioxide?
- Methane
 - Sulphur dioxide
 - Ozone
 - Water vapour
32. The ozone shield in earth's stratosphere protects us from which of the following?
- Ultraviolet light
 - Chlorofluorocarbons
 - Global warming
 - Acid precipitation
33. POPs are chemicals that pollute the environment and are especially harmful as they stay around for a long time. What is the full form of POP?
- Persistent Organic Pollutants
 - Perverse Organic Pollutants
 - Pertinent Organic Pollutants
 - Permanent Organic Pollutants



Enviro-Challenge

34. Which of the following terms was coined in 1905 by Dr HA Des Voeux, a public health official from Glasgow. The term describes a condition of low visibility due to the presence of air pollutants.
- Haze
 - Smog
 - Mist
 - Fog
35. The study of the physical boundaries of oceans, the chemical and physical constitution of seawater, and other aspects of marine biology is known as _____.
- Oceanography
 - Hydrology
 - Limnology
 - Tidology
36. The Stockholm Water Prize is an international award founded in 1991 and is presented annually to an individual, organization, or institute for outstanding water related activities. Name the Indian-born Canadian who won this prestigious award in 2006 for challenging the global status quo on water.
- Asit K Biswas
 - Rajinder Singh
 - Dr Shiv Chopra
 - Lisa Ray
37. If Gaia is the personification of earth in ancient Greek mythology, who personifies the sky?
- Chaos
 - Uranus
 - Athena
 - Tethys
38. A Nobel laureate, also known as the father of the Green Revolution, had developed high-yielding and disease-resistant wheat that nearly doubled India's wheat output and also prevented famine in the developing world. This 1970 recipient of the Nobel Peace Prize was a distinguished professor at Texas A&M University, when he passed away in 2009. Who are we talking about?
- Justus von Liebig
 - MS Swaminathan
 - Robert Bakewell
 - Norman Borlaug



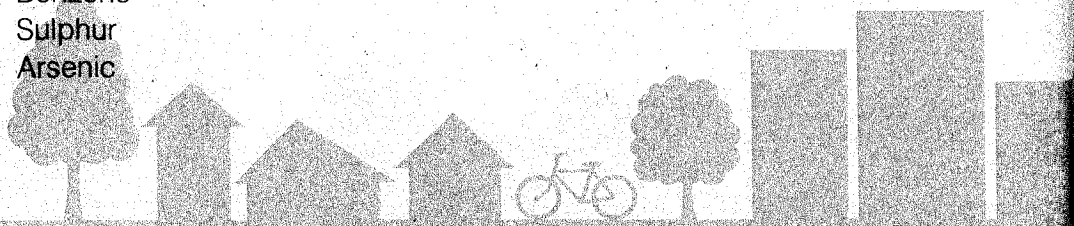
Multiple-Choice Questions

39. Name the author of the book *Silent Spring* which facilitated the ban of DDT in 1972 in the United States.
- Rachel Carson
 - Al Gore
 - Aldo Leopold
 - John Muir
40. What do nodules on the roots of legumes contain?
- Nitrogen-fixing bacteria, which help produce nitrates
 - Denitrifying bacteria
 - Bacteria that release uric acid
 - Bacteria that produce proteins for absorption by plants
41. The Queen of Herbs is the most sacred herb of India. What is it commonly called?
- Tulsi
 - Rosemary
 - Thyme
 - Oregano
42. Most flowering plants depend on insects like honeybees, butterflies, etc., to transport certain 'grains' from one part of a flower to another. What are these 'grains' better known as?
- Stomata
 - Pollen
 - Lenticels
 - Columnar epithelial tissue
43. _____ is a type of agriculture that means growing two or more crops in the same field in a given year.
- Multiple cropping
 - Mixed cropping
 - Crop rotation
 - Mono culture



Enviro-Challenge

44. Robert Swan, the first person in history to walk to both the North Pole and the South Pole, is recognized as the UN Goodwill Ambassador for Youth for his contribution to education and environment. What is the name of his expedition?
- Discovery Expedition
 - 2041
 - Terra Nova Expedition
 - Climate Change Expedition
45. In India, all operational vehicles need to obtain an emission check certificate. What is this certificate known as?
- Emission Under Control
 - Emission Check Certificate
 - Pollution Under Control
 - Pollution Check Certificate
46. _____ is used to measure sound level, but it is also widely used in electronics, signals, and communication.
- Decibel
 - Parts per million
 - Litre
 - Centimetre
47. Name the contaminated liquid that is found in landfill sites.
- Leachate
 - Solute
 - Solvent
 - Solution
48. The two most toxic chemicals in petrol that cause brain damage and leukemia respectively are _____.
- Lead and sulphur
 - Lead and benzene
 - Benzene and sulphur
 - Sulphur and lead
49. Name the most polluting chemical in diesel, the oxides of which are very water-soluble and responsible for causing acid rain.
- Lead
 - Benzene
 - Sulphur
 - Arsenic



Multiple-Choice Questions

50. This is a means of acquiring information using airborne equipment and techniques to determine the characteristics of an area. Aerial photographs from aircrafts and satellites are the most common form of this science. It usually relies upon measurement of electromagnetic energy reflected or emitted from the features of interest. What are we talking about?
- Remote sensing
 - Electromagnetic sensing
 - Photography
 - Mapping
51. Dry ice is carbon dioxide in solid form. It can change back into gaseous form without entering a liquid state. What is this an example of?
- Evaporation
 - Condensation
 - Sublimation
 - Deposition
52. This biennial report series published by the United Nations Environment Programme (UNEP) states the world's environmental priorities, identifying the major issues and possible solutions through policy directives. Name this report.
- Global Environment Outlook (GEO)
 - State of Environment (SOE)
 - Environmental Priorities Report (EPR)
 - None of the above
53. In 1975, _____ became the first woman to climb Mount Everest.
- Junko Tabei
 - Bachendri Pal
 - Jody Thompson
 - Poorna Malavath
54. Across Africa, Asia, and Latin America, this plant is a valuable source of food, furniture, and construction materials. In China, it is known as 'friend of the people'. Name the plant.
- Bamboo
 - Teak
 - Mahogany
 - Jute



Enviro-Challenge

55. Biogas is produced when anaerobic bacteria digest organic matter in the absence of oxygen. What is this process called?
- Anaerobic reduction
 - Anaerobic digestion
 - Anaerobic oxidation
 - Anaerobic drying
56. In which continent is the Amazon River, the second-longest river in the world, located?
- Asia
 - South America
 - South Africa
 - Europe
57. Forest fires can be caused naturally (for instance, by lightning) or by man. The burning of trees in a forest increases which of the following gases in the atmosphere?
- Ozone
 - Carbon dioxide
 - Sulphur dioxide
 - Methane
58. The study of soil is very important to determine agricultural productivity. What is the study of soil in its natural environment known as?
- Dendrology
 - Petrology
 - Meteorology
 - Pedology
59. Agriculture is the cultivation of plants for food. _____ agriculture involves various types of practices that yield higher levels of input and output per unit of land under cultivation.
- Intensive
 - Subsistence
 - Traditional
 - None of the above



Multiple-Choice Questions

60. Mammals are a diverse group inhabiting a wide variety of habitats. Their characteristics are the result of a range of adaptations that allow them to survive in the numerous environmental conditions they live in. Which of the following represents a mammal that is adapted to fly?
- Penguin
 - Eagle
 - Bat
 - Bee
61. A strong-smelling secretion produced by the glands of this animal has been used in perfumes and traditional medicine in Asia for over 5,000 years. Protecting this species is therefore important from both commercial and conservation perspectives. Name this animal.
- Chiru
 - Musk deer
 - Reindeer
 - Ibex
62. India's first national park, the Hailey National Park, named after Governor Malcolm Hailey, was established in August 1936 under the UP National Park Act. Situated in the foothills of the Himalayas and famous for its population of tigers, what is this park currently known as?
- Malcolm Hailey National Park
 - Jim Corbett National Park
 - Sariska National Park
 - Bandhavgarh National Park
63. Which crocodile bank was founded in India in 1976 by the famous herpetologist Romulus Whitaker?
- Kolkata Crocodile Bank
 - Chennai Crocodile Bank
 - Madras Crocodile Bank
 - The Crocodile Bank



Enviro-Challenge

64. A normal light bulb is also known as an incandescent bulb. It contains a very thin tungsten filament. On the other hand, a fluorescent bulb has electrodes at both ends of a tube containing argon and mercury vapour. When it comes to converting electricity into light, how do compact fluorescent bulbs compare to incandescent light bulbs?
- Compact fluorescent bulbs are more efficient
 - Compact fluorescent bulbs have the same efficiency as incandescent bulbs
 - Compact fluorescent bulbs are less efficient
 - None of the above
65. This portable source of heat energy is normally stored under pressure in tanks and bottles. It is also buried underground. Which source of energy are we referring to?
- Propane
 - Biomass
 - Petroleum
 - Solar energy
66. The December 2004 earthquake and the subsequent tsunami were caused by the collision of two continental plates off the western coast of Sumatra. Name the plates.
- Pacific and Australian
 - African and Eurasian
 - Eurasian and Caribbean
 - Indian and Burmese
67. Biodiesel refers to diesel-equivalent biofuel that is generally produced from vegetable oil or animal fat. Even though several different kinds of fuels are considered to be biodiesel, commonly biodiesel refers to which of these?
- Ester
 - Oxygenate (produced from oil and methanol)
 - Alkane (non-oxygenate) biodiesel, i.e. biomass-to-liquid (BTL) fuel
 - All of the above
68. In 1844, the following appeared in a Brooklyn newspaper: '...the iron horse with its lungs of brass and sinews of steel...puffing volumes of smoke and flame from its nostrils...' What did the nickname 'iron horse' refer to?
- Trains
 - Automobiles
 - Steamships
 - Aircrafts



Multiple-Choice Questions

69. This gas-charged igneous rock is basically lava froth. It looks solid, but is full of pores and spaces and weighs very little. It is easily crushed, and the bubbles in it are small and irregular. Which rock are we referring to?
- Pumice
 - Granite
 - Basalt
 - Quartz
70. Rock and soil are altered physically by disintegrating, and chemically by decomposing. Freeze, thaw, frost action, root pry, and abrasion are all types of _____.
- Chemical weathering
 - Physical weathering
 - Deposition
 - Erosion
71. Mother Nature makes glass each time lightning strikes the earth's surface, provided the soil composition is suitable for making glass (contains quartz). Hollow glass tubes formed in soil by lightning strikes are known as _____.
- Fragrite
 - Obsidian
 - Fulgurite
 - Onyx
72. *The Birds of America* is a book by a famed naturalist and painter, and is considered to be the first birding guide. The book contains over 400 illustrations of birds of America drawn by the author during 13 years of travel. It also carries images of six birds that are now extinct: the great auk, Carolina parakeet, passenger pigeon, labrador duck, pinnated grouse, and the esquimaux curlew. Who is the author of *The Birds of America*?
- John James Audubon
 - Rachel Carson
 - Robert Peck
 - Jack Nicholson
73. The Ramsar Convention held at Ramsar, Iran, in 1971 aims at protection of which of the following?
- Wetlands
 - Biodiversity
 - Oceans
 - Forests



Enviro-Challenge

74. Which country was chosen as the host for the United Nations Conference on Sustainable Development (UNCSD) in 2012?
- Sweden
 - India
 - South Africa
 - Brazil
75. Oxygen-demanding wastes serve as food supplies for decomposers. Consumption of dissolved oxygen in water by decomposers can render a stream uninhabitable for various types of aquatic flora and fauna. Oxygen-demanding wastes are contained in effluent from which of the following?
- Agricultural runoff
 - Power plants
 - Inorganic industrial pollutants
 - Mining operations
76. When clearing up leaves and other garbage, it is advisable to segregate and compost the leaves and vegetable waste, rather than burning leaf piles. What does leaf smoke contain?
- Particulate matter
 - Hydrocarbons
 - Carbon monoxide
 - All of the above
77. The study of the ocean, comprising all knowledge with regard to its physical boundaries, the chemistry and physics of seawater, and marine biology is known as oceanography. Who is the 'father of oceanography'?
- James Cook
 - Matthew Maury
 - Jacques Cousteau
 - Harry Hess
78. Water cycle is the process of natural circulation of water in solid, liquid, or gaseous form in the biosphere. The continuous process of evapo-transpiration, condensation, and precipitation makes up the water cycle. What is the process by which plants give off water vapour to the atmosphere?
- Evaporation
 - Transpiration
 - Condensation
 - Precipitation



Multiple-Choice Questions

79. A drainage basin (also known as a watershed) is a region of land where water from rain or snowmelt drains downhill into a body of water, such as a river, lake, estuary, wetland, sea, or ocean. Name the largest river drainage basin in Europe.
- Volga
 - Danube
 - Rhine
 - Thames
80. Warm surface currents invariably flow from the tropics to the higher latitudes, driven mainly by atmospheric winds, as well as the earth's rotation. These currents affect the water temperature along which of the following coasts of continents?
- North
 - West
 - South
 - East



Enviro-Challenge

Answers

1. a. Aphids
2. b. Fibroblast
3. a. Walrus
4. b. Sediment
5. b. Honshu
6. a. Qutang, Wu Xia, Xiling
7. a. 15 October
8. a. Damodar Valley Project
9. a. Le Clemenceau
10. a. Digboi
11. a. Sulphur
12. b. Fly ash
13. a. United Nations Framework Convention on Climate Change
14. a. 11 July
15. a. Ireland
16. a. River Island of Majuli, Midstream of Brahmaputra River, Assam
17. a. Valley of Flowers
18. a. CITES
19. a. 22 May
20. a. Invasive alien species
21. a. Extinct species
22. a. Blue whale
23. c. Natural selection
24. a. Permaculture
25. c. Places of equal air pressure
26. c. Manure
27. a. Geothermal
28. b. Chlorofluorocarbons
29. a. SO₂, NO₂, SPM, and RSPM
30. b. Suspended Particulate Matter
31. a. Methane
32. a. Ultraviolet light
33. a. Persistent organic pollutants
34. b. Smog
35. a. Oceanography
36. a. Asit K Biswas
37. b. Uranus
38. d. Norman Borlaug
39. a. Rachel Carson
40. a. Nitrogen-fixing bacteria, which help produce nitrates
41. a. Tulsi
42. b. Pollen
43. a. Multiple cropping
44. b. 2041
45. c. Pollution Under Control
46. a. Decibel
47. a. Leachate
48. b. Lead and benzene
49. c. Sulphur
50. a. Remote sensing
51. c. Sublimation
52. a. Global Environment Outlook (GEO)
53. a. Junko Tabei
54. a. Bamboo
55. b. Anaerobic digestion
56. b. South America
57. b. Carbon dioxide
58. d. Pedology
59. a. Intensive

Multiple-Choice Questions

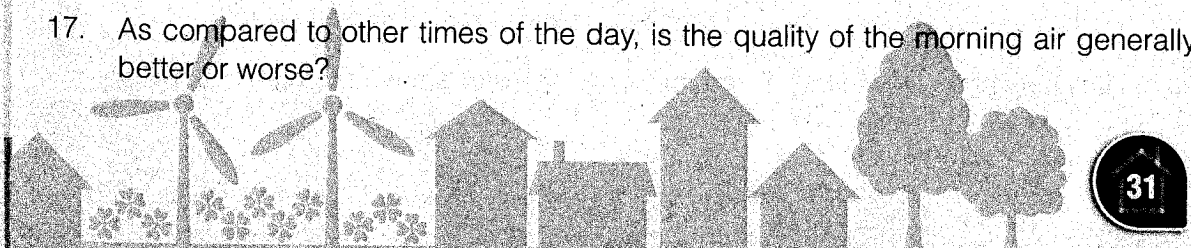
60. c. Bat
61. b. Musk deer
62. b. Jim Corbett National Park
63. c. Madras Crocodile Bank
64. a. Compact fluorescent bulbs are more efficient
65. a. Propane
66. d. Indian and Burmese
67. d. All of the above
68. a. Trains
69. a. Pumice
70. b. Physical weathering
71. c. Fulgurite
72. a. John James Audubon
73. a. Wetlands
74. d. Brazil
75. a. Agricultural runoff
76. d. All of the above
77. b. Matthew Maury
78. b. Transpiration
79. a. Volga
80. d. East

GEO)



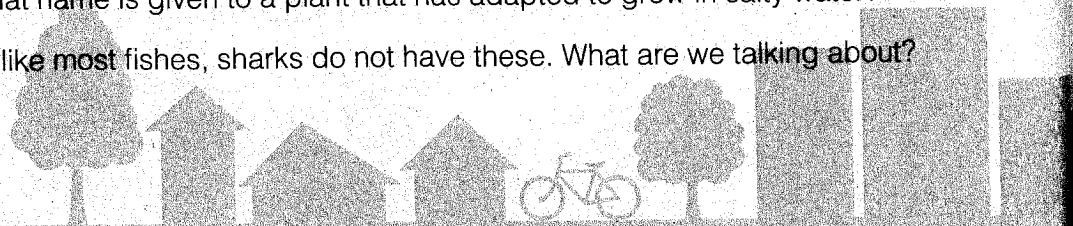
Short Questions

1. What is the inner part of a seed where the embryo is formed known as?
2. What do we call a plant or other organism which gets its food from dead or decaying organic matter?
3. To which crop was the Great Irish Famine of 1847 linked?
4. Which term best describes the fungi that grow on trees?
5. Commonly known as aloe vera, this plant can be separated into two basic products. What are they?
6. This ancient spice was used by the Chinese to make ink. The Romans used it as sandwich spread, while the Arabs thought it had magical powers. Name the spice.
7. By what name do we know the Indian crop that is sown in July–August and harvested in October?
8. What does the term olericulture refer to?
9. Which tissue transports water within the plant?
10. Name the group of bacteria that helps in nitrogen fixation.
11. What is the practice of using plastic materials in agriculture known as?
12. Name the gigantic weed that reaches a height of 12 feet and has 35.5-inch-long leaves.
13. Which term best describes the fungi that grow on trees?
14. Which plant was used by ancient Egyptians to make paper?
15. Fuel, food, and fibre—the basic building blocks for an industrial society—come from a single plant source. Name the plant source.
16. This toxin is a naturally occurring, potent carcinogen produced by *Aspergillus flavus*, a mould found in food products such as corn. It also acts as a potent liver carcinogen in rodents. Which toxin are we talking about?
17. As compared to other times of the day, is the quality of the morning air generally better or worse?



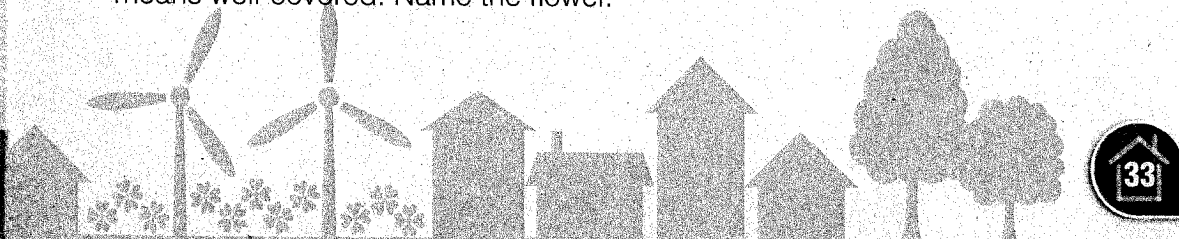
Enviro-Challenge

18. To which weather phenomenon is the Fujita Scale related?
19. What is summer smog also known as?
20. The burning of trees in tropical rainforests increases the amount of this gas in the atmosphere. Name the gas.
21. Which type of radiation gets filtered by the ozone layer?
22. Name the extremely toxic chemical that is released when chlorinated plastics like polyvinyl chlorides (PVC) are burnt.
23. The World Health Organization (WHO) says that this gas causes up to 15 per cent of all lung cancers worldwide. Name this gas.
24. What name is given to the area of calm at the centre of a tropical storm?
25. What do we call a snowstorm that is accompanied by low temperatures, strong winds, and drifting snow?
26. Which gas is the primary constituent of Mars's atmosphere?
27. Which planet in our solar system has the strongest magnetosphere?
28. Which poisonous gas leak resulted in the Bhopal gas tragedy?
29. This hot, dry wind blows from the Sahara Desert and passes through Egypt, Lebanon, Israel, and Syria. Name this wind.
30. Two gases released from the combustion of fossil fuels combine with water vapour to cause acid rain. One of them is sulphur dioxide. Which is the other?
31. What are the two mechanisms responsible for producing precipitation from clouds?
32. Why does the moon sometimes look reddish or orange while rising or setting?
33. Burning coal produces sulphur dioxide, an acidic gas that contributes to the formation of acid rain. There is a method to clean up the gas before it is released. What is this method called?
34. Name the acute lung disease caused by exposure to organic dust, fungus, or mould.
35. What name is given to a plant that has adapted to grow in salty water?
36. Unlike most fishes, sharks do not have these. What are we talking about?



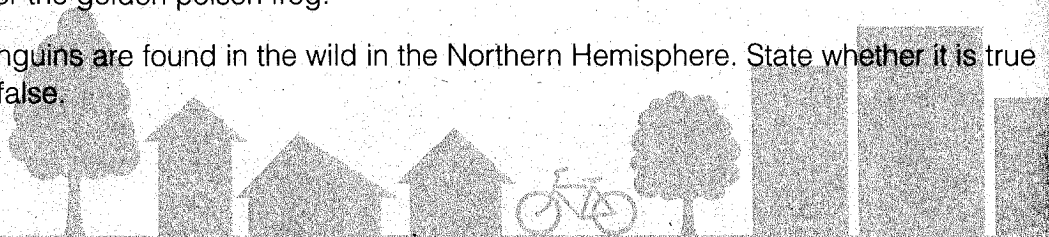
Short Questions

37. What are crepuscular animals?
38. From which rainforest tree is quinine made?
39. *Loxodonta africana* is the largest of all land mammals. By what name do we know this animal better?
40. It is the only snake species found inside the Arctic Circle. It is also Britain's only venomous reptile. Name it.
41. In which national park has Jane Goodall studied chimpanzees for over three decades?
42. What is common to termite mounds and ultra-modern human habitations?
43. There are only two animals with trunks. One is the elephant. Which is the other?
44. Which is the largest rodent in the world?
45. Name the world's smallest deer.
46. A seahorse has an adaptation that helps it watch out for predators and prey without moving its body. Name this adaptation.
47. To which terrestrial insect is the horseshoe crab related?
48. What is the study of biological classification known as?
49. Which is the only termite-eating marsupial in the world?
50. Name the lone staple food the giant panda survives on.
51. Which endangered species is the only great ape of the Asian region?
52. What term is used to denote a species that is introduced to a geographical area where it does not occur naturally?
53. Name the organ that is located strategically in front of the roof of a snake's mouth and acts as a chemical receptor.
54. Near which lake is the Nalabana Bird Sanctuary located?
55. Bud cap is a feature of this flower. The name of the tree to which this flower belongs means well-covered. Name the flower.



Enviro-Challenge

56. The pouches of koalas and wombats are a little different from those of kangaroos. How do they differ?
57. The world's biggest flower grows in the jungles of Borneo and Sumatra in Indonesia. It is 1 m in diameter and weighs up to 11 kg. Name the flower.
58. During fall, we find leaves of different colours such as red, wine-red, and purple. What lends them such colour?
59. Only three types of mammals are venomous. The male duck-billed platypus and several species of shrews form two of these groups of mammals. Which is the third?
60. Name the tundra animal which is threatened by climate change because of the annual migratory pattern it follows.
61. Which Indian grassland bird is on the brink of extinction?
62. In which Indian state can you find the sangai, also known as the dancing deer?
63. What is the offspring of a male horse and a female donkey called?
64. Which is the only sloth bear sanctuary in India?
65. What does a jellyfish's body majorly constitute of?
66. Name the largest turtle species currently alive.
67. Which is the biggest subspecies of tiger currently alive?
68. Which wildlife sanctuary in India is dedicated to saving gharial populations?
69. Which is the only snake in India that can make a nest of its own for laying eggs?
70. Which chemical resulted in the downfall of the Indian vulture population?
71. Which animal was declared as the national heritage symbol of India in the year 2010?
72. White is one of the colours of a zebra's stripes. Which is the other?
73. Which is the only bird known to have a bladder?
74. Name the chemical that renders puffer fish as the second-most poisonous vertebrae after the golden poison frog.
75. Penguins are found in the wild in the Northern Hemisphere. State whether it is true or false.



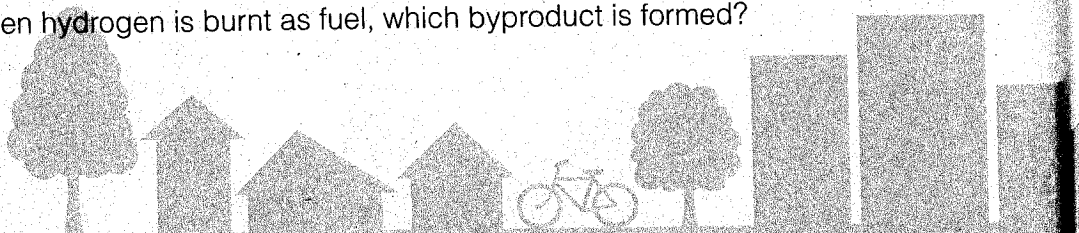
Short Questions

76. What are harmful algal blooms involving toxic phytoplankton colloquially known as?
77. Name the marine ecosystem that is popularly called 'rainforests of the seas'.
78. What is the sum total of all global ecosystems known as?
79. What is the generic term for a plant that does not stand upright on its own?
80. In ancient times, limes were used to light theatres. State whether it is true or false.
81. Electricity can be generated from methane. State whether it is true or false.
82. What are alien species that replace the growth of indigenous species known as?
83. Which natural phenomenon can be forecasted by using the Cone of Uncertainty model?
84. If tsunamis are associated with seismic sea waves, what are tornadoes associated with?
85. Name an artificial technique used to induce rainfall.
86. Which coolant is used in a thermal power plant?
87. Which isotope of uranium is needed in nuclear fission?
88. Coastal areas, mountain gaps, rounded hills, and open plains are best suited for the production of a type of energy. Name the energy we are talking about.
89. Name the source of energy that 'drives' atmospheric motion.
90. Buildings located in urban areas radiate heat, thus creating an effect whereby their temperatures are a few degrees higher than the surrounding rural areas. Which effect is this?
91. Which is the single-largest source of commercial conventional energy?
92. When a refrigerator is stacked with food, does it consume more electricity or less?
93. Which ancient civilization is thought to be the first to use hydropower?
94. What is the other name for 'black light'?
95. What are rotors or blades that spin when driven by steam, gas, water, or wind called?



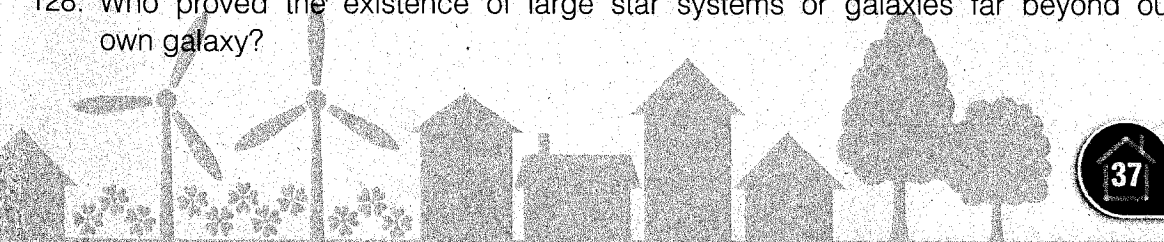
Enviro-Challenge

96. What do we call the process of exposing biomass to high temperatures in the absence of oxygen, which cause it to devolatilize?
97. Which major volcanic eruption drastically affected solar radiation and brought about major weather changes all across the globe?
98. One of the most spectacular geological events is a volcanic eruption. Do volcanoes form when molten rock rises to the surface from the earth's core, crust, or mantle?
99. As a result of the fallout from a nuclear disaster, reindeer in Lapland and sheep in Britain were affected. Which incident are we referring to?
100. The bubonic plague is a disease that spreads from infected rodents to humans via fleas. Name the germ that causes this plague.
101. On 15 April 2006, this river reached its highest level for approximately 111 years, forcing residents of Romania, Bulgaria, Hungary, and Serbia to flee their homes. Which river are we referring to?
102. Ethanol is produced by the fermentation of sugar. State whether it is true or false.
103. When a diesel vehicle is converted to CNG, which is the only pollutant whose emission increases?
104. What is transesterification?
105. What happens to the byproduct that is produced while powering a space shuttle with hydrogen?
106. What happens when biofuel is added to petroleum products?
107. Which is the world's first rapid transit system?
108. Which state in India has the distinction of running India's first metro rail system?
109. Which Indian company is the current manufacturer of India's first electric car, Reva?
110. By what name is a vehicle referred to when it uses two or more distinct power sources to move?
111. In 1974, which country became the first country to implement the Bus Rapid Transit System (BRTS)?
112. When hydrogen is burnt as fuel, which byproduct is formed?



Short Questions

113. Jackrabbit acceleration, which refers to the sudden acceleration of a motor vehicle from a standing-stop position, uses a lot of fuel. It also causes harm to the environment. How?
114. Which fuel is produced when we convert the carbohydrate portion of biomass into sugar and then ferment it?
115. This gas, used as a fuel to drive cars, not only offers better mileage than petrol but also produces the lowest emissions of toxic gases while improving the life of the engine. Name this gas.
116. Lead is one of the two most toxic chemicals used in petrol that cause brain damage and leukaemia. Which is the other?
117. Which element is most abundantly present in the earth's crust?
118. This sedimentary rock was formed from the accumulation of marine plants and animals. Name it.
119. The world's largest caldera, or volcanic depression, is found in Tanzania. Name it.
120. Thunderstorms and lightning deliver a large amount of this element to the surrounding air and soil. Name it.
121. Which is the largest active volcano in the world?
122. Which desert contains the world's largest expanse of unbroken sand?
123. There are seven major tectonic plates upon which the continents move. State whether it is true or false.
124. In a forest, what is the vegetation layer below the tree canopy, or the highest recognizable layer, known as?
125. This scientist discovered that a protozoan called *Plasmodium* causes malaria. Who was this Indian-born Nobel laureate?
126. The well-known book *Earth in the Balance: Ecology and the Human Spirit* was authored by a senator from Tennessee. Name this person.
127. Who propounded the Big Bang Theory?
128. Who proved the existence of large star systems or galaxies far beyond our own galaxy?



Enviro-Challenge

129. In 1995, the Russian cosmonaut Valery Polyakov completed a record 438 consecutive days in space. What was the name of the space station where he lived?
130. Which English scientist discovered the existence of cells by studying a slice of cork under a microscope?
131. Who is the father of modern toxicology?
132. What is Sir Fred Hoyle famous for?
133. Who created the cartoon-strip character Pogo and coined the phrase 'We have met the enemy and he is us'?
134. What was the name of the 10-year-old American girl who wrote to Yuri Andropov, the leader of the USSR, in the winter of 1982 asking him to stop the nuclear arms race?
135. Which Austrian monk postulated a theory of heredity based on his observations of pea plants?
136. Narmada Bachao Andolan (NBA) is a non-governmental organization that mobilized tribals, adivasis, farmers, environmentalists, and human right activists against the Sardar Sarovar Dam built across the Narmada River, Gujarat, India. Who initiated the NBA?
137. In which year did the United Nations General Assembly adopt the world charter for nature?
138. In which year was the Convention for the Conservation of Migratory Species of Wild Animals formed?
139. In which year was the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) drafted?
140. In which city was the famous Earth Summit of 1992 held?
141. What does the conservation status EW stand for?
142. Name the book that facilitated the banning of DDT in 1972 in the United States.
143. Which treaty was designed in 1989 in Switzerland to control the trans-boundary movement of hazardous waste and its disposal?
144. Which article of the Indian Constitution lays down the state's responsibility with regard to environmental protection?

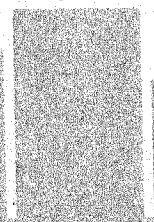
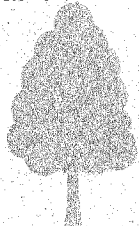


Short Questions

145. What is the list of ecoregions identified by the World Wildlife Fund as conservation priorities known as?
146. Which term is used to denote bacteria or fungi injected into compost to initiate a biological action?
147. Should a landfill be built above or below the groundwater table?
148. The burning of plastic emits a pollutant that is carcinogenic in nature. Name it.
149. On which date is Green Consumer Day celebrated?
150. In the disposal of biomedical waste, what type of treatment does a yellow-coloured plastic bag signify?
151. PET bottles, which are generally used as soft drink containers, are recyclable. What is the full form of PET?
152. In 1970, Gary Anderson, a student from the University of Southern California, USA, won a contest for his design which is now the most recognized symbol in the field of waste management. What did he design?
153. Which city in Brazil introduced a complimentary currency of recyclables for purchasing bus tokens?
154. Rain is naturally acidic. What is its pH level—about 5 or about 9?
155. What is the temperature (in Celsius) at which water has maximum density?
156. What causes hurricanes and cyclones—sea temperature or lunar gravity?
157. Which is the largest non-point source of water pollution—agriculture or industry?
158. What do we call the top of a water-saturated zone?
159. What do we call the deepest portions of an ocean basin?
160. On which Chinese river was the Three Gorges Dam built?
161. Which toxic element is commonly found in old water pipes?
162. Which country pioneered the art of drip irrigation?
163. Where is most freshwater found on earth?
164. What are large, dangerous ocean waves produced by hurricanes or typhoons called?

Enviro-Challenge

165. Which disease is caused by the presence of excess nitrogen in drinking water?
166. What is an underwater volcano called?
167. Where is water found on Mars?
168. With which ocean is the La Niña weather event associated?
169. What is the perpetual movement of sand along a coastline called?
170. Name the largest delta in the world.
171. The Red Sea got its name because of a type of algae. When these blooms of algae die, they appear to turn the blue-green colour of the ocean to a reddish-brown. Name the algae.
172. What are seas or freshwater areas with severe depletion of dissolved oxygen known as?
173. A banana kept inside a refrigerator blackens prematurely. The cold air to which the banana is exposed causes the production of blackening compounds. What are these compounds known as?
174. Of the four states of matter, three are solid, liquid, and gas. Which is the fourth?
175. Which term is used to denote the conversion of coal into syncrude?
176. Which disease is transmitted by *Aedes aegypti*?
177. Which common term is derived from the Greek word *plassein*?
178. Which unsafe chemical is used in deodorants to block sweat?
179. What is the term used to denote an interacting group of individuals belonging to the same species?
180. Which term is used to denote different forms of the same gene?
181. Also known as 'K', what is the term used to describe the maximum maintainable population of an area?
182. Which term corresponds to 'summer', if 'hibernation' corresponds to 'winter'?
183. What is the science that deals with the universe beyond the earth called?



Short Questions

184. Due to the ban on DDT, there was a rise in this disease in certain Third World countries. Which disease are we talking about?
185. What do you call a person who does scientific mapping of the moon?
186. This is a bacterial infection in humans. Coming in contact with infected animals or water contaminated with rat urine leads to its transmission. It is also known as Weil's disease. Name this infection.
187. Which term is used to describe a group of individuals who promote the research, education, and conservation of primates?
188. What is the meaning of the Latin word *nebula*?
189. What is the scientific study of ice, snow, hail and other low-temperature phenomena known as?
190. The cut-flower trade began in the Netherlands in the 1600s. Name the flower with which this trade started.
191. Nuts are a rich source of copper and magnesium. They are also an excellent source of a particular vitamin which is known to be beneficial to the heart. Name this vitamin.
192. Which type of viruses are alphaviruses, flaviviruses, bunyaviruses, and reoviruses?
193. What do we call seeds that do not survive drying and freezing?
194. What is the study of wildlife sounds called?
195. What is the broadened bottom of a tree trunk which helps balance a tree called?
196. Why does fireproof clothing often have a shiny surface?
197. What is the collective term used for herbicides, avicides, algacides, rodenticides, fumigants, and so on?
198. A seismically active region of the earth is located in the Pacific Ocean. What is it popularly known as?
199. Gamma-Hexachlorocyclohexane (gamma-HCH) is a nerve poison and an organochlorine pesticide. But it is often used for the treatment of head lice and scabies. What is its common name?
200. When we peel onions, they secrete an irritating substance that makes our eyes water. What is this substance?



201. Why does stainless steel not corrode?
202. What is the name given to the area around the Taj Mahal, over which a blanket ban has been imposed regarding establishing industries using fossil fuels?
203. The moon and the earth are approximately at the same distance from the sun; why do they not have the same temperature?
204. What index is used to measure the relative explosiveness of a volcano?
205. In which country is the super-volcano Yellowstone found?
206. Which is the highest-known mountain in the solar system with a height of over 25 km?
207. What is the deepest point located at the end of the Mariana Trench?
208. Name the concept which refers to the relative impact of countries on the earth's resources.
209. What is the decrease in concentration of an element or pollutant with an increase in trophic level termed?
210. Which disaster is the famous Exxon Valdez case linked to?



Answers

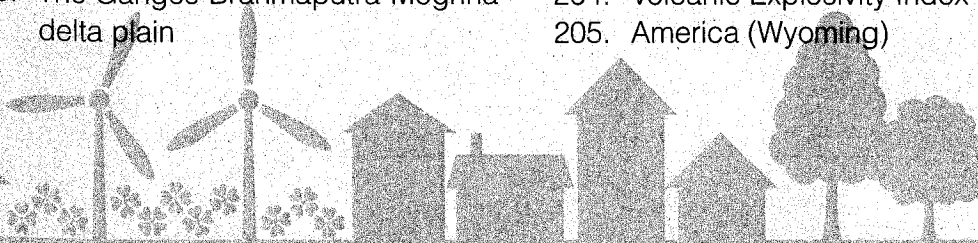
1. Kernel
2. Saprophyte
3. Potato
4. Decomposer
5. Gel (the leaf pulp) and latex (a bitter yellow exudate)
6. Sesame
7. Kharif
8. Science of growing vegetables
9. Xylem
10. Cynobacteria
11. Plasticulture
12. Giant hogweed (*Heracleum mantegazzianum*)
13. Decomposer
14. Papyrus
15. Hemp
16. Aflatoxin
17. Better
18. Tornadoes
19. Photochemical smog
20. CO₂
21. Ultraviolet radiation
22. Dioxins
23. Radon
24. The eye
25. Blizzard
26. Carbon dioxide
27. Earth
28. Methyl isocyanide
29. Khamsin
30. Nitrogen oxide
31. Collision-coalescence process and ice-crystal process
32. Dust in the atmosphere diffracts the light
33. Flue gas desulphurization
34. Hypersensitivity pneumonitis
35. Halophyte
36. Bones
37. Animals that are active only at dusk and dawn
38. *Cinchona*
39. African bush elephant
40. Adder, or the common viper
41. Gombe National Park (Tanzania)
42. Air-conditioning
43. Tapir
44. Capybara
45. Leaf muntjac, or leaf deer
46. Highly mobile eyes
47. Spider
48. Taxonomy
49. Numbat
50. Bamboo
51. Orangutan
52. Exotic species
53. Jacobson's Organ
54. Chilka lake
55. Eucalyptus flower
56. The kangaroo's pouch is on the front; while the koala's and wombat's pouches are on the back
57. Rafflesia
58. Anthocyanins
59. Solenodons
60. Caribou
61. Great Indian Bustard
62. Manipur (Loktak Lake)
63. Hinny
64. Daroji wildlife sanctuary
65. Water (95 per cent)
66. The leatherback turtle
67. Siberian tiger

68. Chambal wildlife sanctuary
69. King Cobra
70. Diclofenac
71. Elephant
72. Brown
73. Ostrich
74. Tetrodotoxin
75. False
76. Red tides
77. Coral reefs
78. Biosphere
79. Vines
80. True
81. True
82. Invasive species
83. Hurricane
84. Thunderstorms
85. Cloud seeding
86. Water
87. Uranium-235
88. Wind energy
89. Sun
90. The heat island effect
91. Oil
92. Less electricity (because the food soaks up the cold air and keeps it trapped inside)
93. Greek civilization
94. Ultraviolet radiation
95. Turbine
96. Pyrolysis
97. Krakatoa
98. The mantle
99. Chernobyl
100. *Yersinia pestis*
101. River Danube
102. True
103. Methane
104. A process that turns vegetable oil and animal fat into esterified oil, which can be used in place of diesel fuel, or can be mixed with regular diesel fuel
105. Used as drinking water for the crew
106. It allows the fuel to combust more completely, and thereby reduces air pollution
107. The London Underground
108. West Bengal
109. Mahindra and Mahindra
110. Hybrid vehicle
111. Brazil
112. Water
113. The vehicle produces higher emissions
114. Ethanol
115. Compressed natural gas (CNG)
116. Benzene
117. Oxygen
118. Limestone
119. Ngorongoro crater
120. Nitrogen
121. Mauna Loa
122. Arabian Desert
123. True
124. Understory
125. Ronald Ross
126. Al Gore
127. George Gamow
128. Edwin Powell Hubble
129. Mir
130. Robert Hooke
131. Paracelsus
132. He developed the steady-state model of the earth
133. Walt Disney



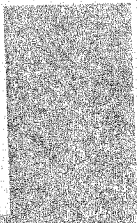
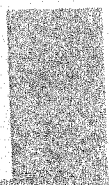
Short Questions

134. Walt Kelly
135. Samantha Smith
136. Medha Patkar
137. 1982
138. 1979
139. 1973
140. Rio de Janeiro
141. Extinct in the Wild
142. Silent Spring
143. Basel Convention
144. Article 48-A
145. Global 200
146. Inoculum
147. Above
148. Dioxins
149. 28 September
150. Incineration
151. Polyethylene terephthalate
152. The recycling symbol
153. Curitiba
154. About 5
155. 4°C
156. Sea temperature
157. Agriculture
158. Water table
159. Ocean trenches
160. Yangtze Kiang
161. Lead
162. Israel
163. Polar caps
164. Storm surge
165. Methemoglobinemia
166. Seamount
167. North polar cap
168. Pacific Ocean
169. Longshore drift
170. The Ganges-Brahmaputra-Meghna delta plain
171. *Trichodesmium erythraeum*
172. Anoxic waters
173. Polyphenols
174. Plasma
175. Coal liquefaction
176. Dengue
177. Plastic
178. Aluminium compound
179. Population
180. Allele
181. Carrying capacity
182. Aestivation
183. Astronomy
184. Malaria
185. Selenographer
186. Leptospirosis
187. Primatologists
188. Cloud
189. Cryology
190. Tulip
191. Vitamin E
192. Arbovirus
193. Recalcitrant seeds
194. Bioacoustics
195. Buttress
196. To reflect the radiated heat away from the body
197. Biocides
198. The Ring of Fire
199. Lindane
200. Oil containing sulphur
201. It contains small amounts of nickel and chromium
202. The Taj Trapezium Zone
203. Due to the moon's lack of atmosphere
204. Volcanic Explosivity Index (VEI)
205. America (Wyoming)



Enviro-Challenge

- 206. Olympus Mons
- 207. Challenger Deep
- 208. Ecological Footprint
- 209. Biodilution
- 210. Oil spill



Model Questions

1. The World Food Prize is an international award which recognizes the achievements of individuals who have advanced human development by improving the quality, quantity, or availability of food in the world. Who among the following is the recipient of the first World Food Prize?
 - a. Dr MS Swaminathan (India)
 - b. Dr Verghese Kurien (India)
 - c. Muhammad Yunus (Bangladesh)
 - d. Robert F Chandler (USA)
2. The National Food Security Act, also known as the Right to Food Act, is a legislation which aims to provide food grains at subsidized rates to Indian citizens. When was this act passed?
 - a. 2002
 - b. 2011
 - c. 2013
 - d. 1998
3. Which among the following is a method of farming?
 - a. Crop rotation
 - b. Netting
 - c. Hand gathering
 - d. Spearing
4. Cotyledons are the first parts of a seedling to emerge from the soil when the seed germinates. There are two categories of plants—monocotyledons and dicotyledons. Which of the following is not a monocotyledon?
 - a. Onion
 - b. Garlic
 - c. Lily
 - d. Magnolia
5. Which among the following crops has been genetically modified and produced across the world?
 - a. Rice
 - b. Corn
 - c. Cotton
 - d. All of the above



Enviro-Challenge

6. Which among the following countries has recorded the highest production of genetically modified or GMO crops?
 - a. United States of America
 - b. India
 - c. China
 - d. Iran
7. Which of the following substances can be used to produce organic manure?
 - a. Dry leaves
 - b. Cow dung
 - c. Vegetable waste
 - d. All of the above
8. Diversification and intensification of food and plantation crops is a suggested method to combat the impact of climate change on agriculture. This method is thus known as _____.
 - a. An adaptation strategy
 - b. A mitigation strategy
 - c. A carbon removal strategy
 - d. None of the above
9. Where is the world's largest fuel cell plant, a 59MW facility which provides both power and heat to homes, located?
 - a. Berlin, Germany
 - b. Hwasung, South Korea
 - c. Fukuoka, Japan
 - d. Reykjavik, Iceland
10. Which famous Indian scientist successfully proved that plants respond to touch and external stimuli?
 - a. Dr MS Swaminathan
 - b. Srinivasa Ramanujan
 - c. CV Raman
 - d. Jagdish Chandra Bose
11. The Grand Ethiopian Renaissance Dam is this continent's biggest hydropower plant and is also one of the most ambitious infrastructure projects across the major tributary of the river Nile. In which continent is this dam being built?
 - a. Asia
 - b. Europe
 - c. Africa
 - d. South America