Lukhdhirji Engineering College

General Department

BE –SEMESTER II
(2021-22)

Branch: Civil Eng, Mechanical Eng

ENVIRONMENT STUDIES

3110007

Tutorial Book

Name of the faculties:

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Branch:_____, Division:_____
Semester:_____.

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BE –SEMESTER II(2021-22), Tutorial No-1

Subject Code: 3110007
Subject Name: Environmental Science
Time: 2hrs.

Unit-1, INTRODUCTION TO ENVIRONMENT (CO2)

Definition, principles and scope of Environmental Science.
Impacts of technology on Environment, Environmental Degradation,
Importance for different engineering disciplines

Write the answers of the following questions.

1. What do you understand by the terms (i) Ecology (ii) Niche and (iii) Habitat.
2. What are the components of ecosystem? List the abiotic and biotic components of the ecosystem.
3. Write down the two examples of (i) Natural ecosystem and (ii) Man Made ecosystem.
4. Prepare the list of natural resources without which life can't exist.
5. Write down the name of factors that lead to industrialization.
6. What is the impact of industrialization upon nature,
7. What is environment degradation, State any two examples of environmental degradation caused by humans.
8. What is deforestation? Write the reasons why humans are cutting the trees. State any two consequences of deforestation.
9. Why there is water scarcity in cities.
10. Name the chemical responsible for Minamata disease. Discuss how it enters into human beings.
11. What are the different elemental components of atmosphere? Discuss all 4 components.
12. Why environmental education is necessary for engineers.

Important days regarding environment:

SN	Name of the day	Day & Month
1	World Forest Day	
2	World Water Day	
3	Earth Day	
4	World Environment Day	
5	World Population Day	
6	Ozone Day	
7	World Nature Day	
8	World Animal Welfare Day	
9	World Food Day	

CASE STUDIES/ ACTIVITIES

1) What you can do to conserve our Environment?
2) What do you thing, the reasons behind increase in human population.
3) Why Environment Science is an interdisciplinary?
4) Find the connection:
   (a) Drink a coffee in US and make the songbird vanish in South America.
   (b) Get a rid of a malaria, but invite the plague!

5) Read the below Wikipedia link and explain the population issues in your words.

Link: https://en.wikipedia.org/wiki/Dharavi
OR Search Dharvai Population Issues

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BE –SEMESTER II(2021-22), Tutorial No-2

Subject Code: 3110007
Subject Name: Environmental Science
Time: 2hrs.

Unit-2 : ENVIRONMENTAL POLLUTION (CO1)

a) Water Pollution: Introduction – Water Quality Standards, Sources of Water Pollution, Classification of water pollutants, Effects of water pollutants
b) Air Pollution: Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, Sources of common air pollutants like PM, SO2, NOX, Auto exhaust, Effects of common air pollutants
c) Noise Pollution: Introduction, Sound and Noise, Noise measurements, Causes and Effects
d) Solid Waste: Generation and management
e) Bio-medical Waste: Generation and management
f) E-waste: Generation and management

Write the answers of the following questions. (Part 1)

1. Define Pollution.
2. Enlist the different causes for Environment pollution.
3. What are the effects of Pollution?
4. Enlist the different sources of pollution.
5. Define the need for the Water Quality Standards.
6. Write the names of different Physical characteristics for WQS.
7. What is BIS, What is its relation with WQS.
8. Define Turbidity, and write the unit of Turbidity.
9. Write the signs of clean water.
10. If the temperature of water from river is high in compare to surroundings, what will you decide about the quality of water.
11. Write the names of physical parameters of WQS.
12. Write the names of chemical parameters of WQS.
13. Short note : TDS
14. What is permissible limit for TDS in India?
15. What are the effects of TDS in water.
16. How we can control or reduce the TDS in water
17. Define pH, Write the equation for the pH and what is a value of pH for neutral water.
18. Short note : Flurosis
19. What is effect of higher level of fluoride in human beings?
20. Define why we need to check quality of water biologically.
21. Enlist the different water pollutants.
22. What are oxygen demanding waste materials?
23. Explain how the oily substances affect the quality of water.
24. Write the names of synthetic organic compound which pollutes the water.
25. Short note: Water Bourne Dieses.

26. Define Air Pollution and Air pollutant.
27. What is an importance of good quality of air.
28. Explain the types of Air pollutant.
29. Prepare the list of Air pollution sources.
30. Explain : Why air pollution is a threat for important structures?
31. What is national ambient air quality index?
32. Who controls the Air quality index in India? (Name of the organization)
33. Write the names of different Air pollutants as per NAAQI.
34. Explain: The structure of atmosphere.
35. Write the name of the composition gases of AIR.
36. How Ozone layers is helpful to us.
37. Differentiate primary and secondary air pollutants.
38. Write the names of Sources of So2 pollution and its effect on environment.
39. What is PM Pollutants, write it types and its effect on environment.
40. What are the permissible limits for PM10 and PM 2.5 , SO2 and NO2.
41. Prepare the list of different sources of air pollutants based on anthropogenic and nature sources.
42. Write the effects of NO2.
43. Write the effects of SO2.
44. What is noise pollution?
45. What are the effects of noise pollution?
46. What is the unit for measurement of noise?
47. What is silence zone in reference to noise pollution?

ACTIVITIES/CASE STUDY:

1) Chipko movement

    1) What is it?
    2) Where does it started?
    3) Why Chipko?
    4) Who stared it first?
    5) Explain Deforestation.

2) Write the different activities by protect the environment.
3) India's dying mother by Justin Rowlatt

    https://www.bbc.co.uk/news/resources/idt-aad46fca-734a-45f9-8721-61404cc12a39

    Express your thoughts for this case as a short note:

4) Study and narrate the Bhopal Gas Tragedy.

5) Burning for 100 years a story of Jharia

Jharia is source of high quality coal in India, an important ingredient of India's growth story. Coal supports the iron and steel industry, which, along with its subsidiary industries, thrive in the Jharkhand-Bengal-Chhattisgarh region. A good number of India's trains, until early 90s, depended on coal to produce that sweet whistle and chugging sound.

Even today, over 65 percent of India's power supply is generated from coal. Mining of coal in Jharia started in 1894, and has increased ever since. Today, Jharia is home to two large underground and nine large open cast mines.

1. What type of pollution is concern with the case?
2. Find the issues with people of Jharia
3. Write the short note on Jharia issues.

6) "The Taj Mahal lost its beauty, It's turning yellow" explain it with proper reason.

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BE –SEMESTER II (2021-22), Tutorial No-3

Subject Code: 3110007
Subject Name: Environmental Science
Time: 2hrs.

Unit-3 : Global Environmental Issues (CO2)

Sustainable Development, Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer, Carbon Footprint, Cleaner Development Mechanism (CDM), International Steps for Mitigating Global Change

1. What are the main features of sustainable development? Explain.
2. What is Green House Effect?
3. What are the effects of Global Warming?
4. What is ozone layer? How it is depleted. What are the consequences of its depletion. What is Dobson Unit.
5. What are the different layers in atmosphere? How the temperature changes with altitude. Explain with Altitude verses temperature graph.
6. What is Acid Rain. What are the effects of Acid Rain.
7. What is global warming potential (GWP) of Green House Gases. Enlist the values of relative GWP and concentration of Green House Gases.
8. Write down about the steps taken by international community to mitigate global change.
9. Write short notes on
    - Green House Gases
    - Carbon Footprint
    - Clean Development Mechanism
    - Kyoto Protocol
    - Montreal Protocol

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BE –SEMESTER II (2021-22), Tutorial No-4

Subject Code: 3110007
Subject Name: Environmental Science
Time: 2hrs.

Unit 4: BASIC CONCEPT OF GREEN BUILDING AND SMART CITIES (CO3)

Green Building: Introduction, Objectives, Fundamental Principles, Benefits of Green Building, Examples of Green Building Smart Cities: Concept

1. Write down the full form of following terms and write short noteon them
   (i) LEED
   (ii) IGBC
   (iii) GRIHA
   (iv) ADARSH
   (v) IOT
   (vi) GWP
   (vii) ICT
   (vii) PPP
   (viii) SPV
   (ix) VOC

2. What is GRIHA rating system and write down at least 5 major criteria of GRIHA rating system.

3. Give 10 Examples of GRIHArated buildings In India and 5 Examples of IGBC rated buildings In India.

4. What are the advantages and disadvantages of green buildings?

5. What is smart city concept? Discuss about the four pillars of smart city?

6. Name first 10 cities which are been adopted under smart city mission by Govt. of India.

7. What are the main features of smart city? Name any 5 smart cities of the world and their main features.

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BE –SEMESTER II (2021-22), Tutorial No-5

Subject Code: 3110007
Subject Name: Environmental Science
Time: 2hrs.

Unit 5: CONCEPT OF 4R's (CO4)

Principles, Application of 4R's

1. What is the principle of 4R?
2. What are the benefits of 4R.
3. What are the applications of 4 R.
4. Discuss how long it takes to decompose
    (i) Paper Towel
    (ii) Newspaper
    (iii) Plywood
    (iv) Plastic bag
    (v) Tin Can
    (vi) Rubber boot sole
    (vii) Disposable diaper
    (viii) Plastic beverage bottle
    (ix) Glass bottle

5. Write down the names of the things that can be used for recovering energy.