

B.E IN CIVIL ENGINEERING(CV-2018-19)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module - 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.

Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module - 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind.

Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.

Module - 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.

Module - 4

Global Environmental Concerns (Concept, policies and case-studies): Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module - 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.

Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

Course outcomes: At the end of the course, students will be able to:

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbook/s				
1	Environmental Studies	Benny Joseph	Tata Mc Graw – Hill.	2 nd Edition, 2012

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DEPARTMENT OF CIVIL ENGINEERING
SAPTHAGIRI COLLEGE OF ENGINEERING
LESSON PLAN FOR THE ACADEMIC YEAR: ODD 2021-22

ENVIRONMENTAL STUDIES

18CIV59

V SEM CS 'A'

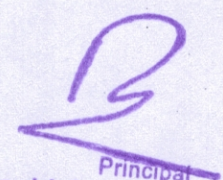
Period	Planned Date	Topic Planned	Actual Date	Topic covered	Remarks
1	19-10-2021	Module-1: Introduction-Ecosystems	09-10-2020	Module-1: Introduction-Ecosystems	
2	26-10-2021	Bio diversity and Food chain	16-10-2020	Bio diversity and Food chain	
3	9-11-2021	Ecology	23-10-2020	Ecology	
4	16-11-2020	Hotspot and Other regions	30-10-2020	Hotspot and Other regions	
5	07-12-2021	Types of plans, construction management life cycle	19-11-2020	Types of plans, construction management life cycle	

Students can understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale.

6	14-12-2021	Module 2- Introduction, Advances in Energy systems	19-11-2020	Module 2- Introduction, Advances in Energy systems	
7	21-12-2021	OTEC	27-11-2020	OTEC	
8	28-12-2021	Module 3- Introduction, Ground water pollution	04-12-2020	Module 3- Introduction, Ground water pollution	

Students will analyze and demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.

9	04-01-2021	Module 4- Introduction,	04-12-2020	Module 4- Introduction,	
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 HOD, Dept of Civil Engg
 Sapthagiri College of Engineering



USN 1 S G C V

F-IAT-04/R0

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AICTE, New Delhi) AY: 2021-2022

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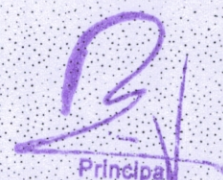
Accredited by NAAC -A GRADE

Internal Assessment –I

Subject: Environmental Studies	Sub Code: 18CIV59	Name of the Course Instructors
Semester/Section: V-EEE (A&B)	Max.Marks: 30	Pallavi G A, Dhruvaraj M S
Duration: 1 hr	Date: 10/11/2021	Time: 3.30pm-4.30pm

Note: Answer all the questions

- The world population in 2000 was around
 - 8 billion
 - 6.1 billion
 - 7.1 billion
 - 5.1 billion
- The universal declaration of human rights was proclaimed by the UN in the year
 - 1946
 - 1947
 - 1948
 - 1949
- The major objective of family programmes in india is
 - Disease control population
 - Population growth rate control
 - Employment generation
 - None of the above
- Which of the following conceptual spheres of the environment is having the least storage capacity for matter?
 - Atmosphere
 - Lithosphere
 - Hydrosphere
 - Biosphere
- Atmosphere consists of 79 per cent Nitrogen and 21 per cent Oxygen by
 - Volume
 - weight
 - Density
 - All the three
- In complex ecosystems the degree of species diversity is
 - Poor
 - high
 - medium
 - none
- The sequence of eating and being eaten in an ecosystem is called
 - Food Chain
 - carbon cycle
 - hydrological cycle
 - anthropo system
- Which of the following is a producer in an ecosystem?
 - Plants and some bacteria capable of producing their own food
 - Animals
 - Human beings
 - Fish
- The largest reservoir of nitrogen in our planet is
 - Oceans
 - Atmosphere
 - biosphere
 - Fossil fuels
- In aquatic ecosystem phytoplankton can be considered as a
 - Consumer
 - Producer
 - Saprotrophic organisms
 - Macroconsumer
- The basic requirements of human beings are provided by
 - Industrialization
 - Agriculture
 - Nature
 - Urbanization


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24. The two major components of ecosystem are

- a) Adiabatic & Isotropic
- b) Ecologic & climatologic
- c) Cyclic & biologic
- d) Abiotic & biotic.

25. Biotic components include

- a) All living organisms
- b) water, mineral & gases
- c) Self-nourishing green plants
- d) Light, temperature etc.

26. Food chain is divided into -----basic categories

- a) Four b) Three c) Five d) Seven

27. Mining practices lead to

- a) Population growth
- b) Rapid urbanization
- c) Loss of grazing and fertile land
- d) None of these

28. Which of the following are major environmental issues involved in mining?

- a) Air pollution from dust
- b) Water pollution
- c) Soil degradation
- d) All of the above

29. Mining means

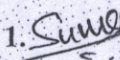
- a) To conserve & preserve minerals
- b) To check pollution due to mineral resources
- c) To extract minerals and ores
- d) Soil

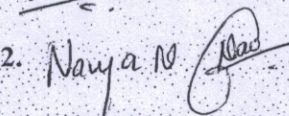
30. Gold occurs in

- a) Sedimentary deposits b) Placer deposits c) Hydrothermal deposits d) None.


CO 1	Understand the principles of ecology and environmental issues that apply to air, land and water issues on a global scale.
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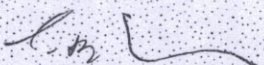
Scrutinized by:

1. 

2. 


Signature of Course Instructor


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HOD

SAPTHAGIRI COLLEGE OF ENGINEERING, BANGALORE - 57

F-IAT-05/R0

DEPARTMENT OF CIVIL ENGINEERING

SCHEME AND SOLUTIONS

SEMESTER: 5th Sem

SUBJECT: Environmental Studies

DURATION: 1hr

STAFF NAME: .

DATE: 10/11/2021

SUBJECT CODE: 18CV58

MARKS: 30 marks

SIGNATURE: P. Anil A

INTERNAL TEST

Qs. No.	Solutions	Marks Allocated
1]	b	
2]	c	
3]	b	
4]	d	
5]	a	
6]	b	
7]	a	
8]	a	
9]	b	
10]	b	
11]	c	
12]	d	
13]	b	
14]	a	
15]	a	

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Internal Assessment Test-II**F-IAT-04/R0**

Subject: Environmental Studies	Sub Code: 18CIV59	Name of the coarse instructors.
Semester/Section: 5th SEM	Max Marks: 30	PGA,SNG,SGM,GTS,KHP,DMS,MD,AJ
Duration: 60 Minutes	Date: 21.12.2021	Time: 9.30am to 10.30am

Note: Answer all the questions

- Which of the following are the primary causes of water pollution?
(a) Plants (b) Animals (c) Human activities (d) none of these
- Which of the following is mainly responsible for the causes of water pollution?
(a) Afforestation (b) Oil refineries (c) Paper factories (d) Both b and c
- What are the health effects of excess fluoride in drinking water?
(a) Fluorosis (b) Toothaches (c) Lung disease (d) Intestinal infection
- Which of the following is a waterborne disease?
(a) Typhoid (b) Cholera (c) Diarrhoea (d) All of the above
- Environmental (Protection) Act was enacted in the year (II-2007) (I-2006)
a) 1986 b) 1992 c) 1984 d) 1974
- The two forms of oxygen found in the atmosphere are
(a) Water and ozone (b) water and oxygen (c) ozone and oxygen (d) water and carbon-dioxide
- Soil erosion can be prevented by
(a) Raising forests (b) deforestation (c) excessive use of fertilizer (d) overgrazing by animals
- Which of the following gas is more in percentage in the air?
(a) Oxygen gas (b) Nitrogen gas (c) Water vapour (d) Carbon dioxide gas
- The major causes of air pollution include
(a) Burning of coal and petroleum (b) afforestation (c) deforestation (d) recycling of paper
- The Noise is measured in
a. Decibels b. joules c. PPM d. ms or NTU
- Roadways noise can be reduced by
(a) Use of noise barriers (a) limitation of vehicles speed (c) alteration of roadway surface texture
(d) all of the above
- The burning of solid waste is not recommended because
(a) It is very costly (b) It requires a lot of space (c) It requires modern technologies
(d) It causes several environmental issues
- How many main components are there in integrated waste management?
(a) Two (b) Three (c) Seven (d) Eleven
- What is the order of waste management hierarchy, from most to least favoured
a. Prevention- Recycle-Reuse- Disposal b. Prevention-Reuse-Disposal-Recycle
c. Prevention-Disposal -Reuse-Recycle d. Prevention-Reuse-Recycle-Disposal
- What is the most expensive component of solid waste handling?
a. Collection b. Storage c. Treatment d. Separation



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DEPARTMENT OF CIVIL ENGINEERING

**SCHEME & SOLUTION
INTERNAL ASSESSMENT**

Subject: *Environmental Studies*
 Subject Code: *18CIV59*
 Date: *20/12/21*

IA : First / Second / Third
 Staff-In charge : *All faculties*

Question Number	Solution	Marks Allocated
1)	b	
2)	b	
3)	a	
4)	c	
5)	b	
6)	b	
7)	b	
8)	c	
9)	d	
10)	c	
11)	c	
12)	d	
13)	d	
14)	a	
15)	a	
16)	b	
17)	a	
18)	b	
19)	a	
20)	d	


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18CIV59

Sl. No	USN	NAME	20/07/2011								
			1	2	3	4	5	6	7	8	9
1	15G17CS050	MD WATAHAT RAZA	1	2	2	3	4	4	5	6	7
2	15G18CS019	BHUVAN GOUDA B.S	0	1	2	2	3	4	5	6	7
3	15G18CS022	DARSHAN.S.	0	1	2	2	3	4	5	6	7
4	15G19CS001	ABHAY SMARA HALEMANE	1	2	3	4	5	6	7	8	9
5	15G19CS002	ABHJITH YADAV L	1	2	3	3	4	5	6	7	8
6	15G19CS003	ABHILASH S	1	2	3	4	5	6	7	8	9
7	15G19CS004	ADHARSH BHANU SHARMA.B.S	0	1	2	3	4	5	6	7	8
8	15G19CS005	AMAN KUMAR	1	2	2	3	4	5	6	7	8
9	15G19CS006	AMODHANA NATEKAR J	1	2	3	4	5	6	7	7	8
10	15G19CS007	ANISH BHAT	1	2	3	4	5	6	7	8	9
11	15G19CS008	ANJALI G.S	1	2	2	3	4	5	6	7	8
12	15G19CS009	ANKUR KUMAR	0	1	2	3	4	5	6	7	8
13	15G19CS010	ANUBHAV ANAND	1	2	3	4	5	6	7	8	9
14	15G19CS011	ANURAG SINGH	0	1	2	3	4	5	6	7	8
15	15G19CS012	ANUSHA D.V.	1	2	3	4	5	6	7	8	9
16	15G19CS013	ARHAM SABHA	1	2	2	3	4	5	6	7	8
17	15G19CS014	ASHISH SINGH V	0	1	1	2	3	4	5	6	7
18	15G19CS015	BHANURANTHAN BELAKKI	1	2	3	4	5	6	7	8	9
19	15G19CS016	BHAVYA VAISHNAVIT	0	1	2	3	4	5	6	7	8
20	15G19CS017	BHUMIKA M	1	2	3	4	5	6	7	8	9
21	15G19CS018	CHANDHAN V.M V	1	2	3	3	4	5	6	7	8
22	15G19CS019	CHANDANA G.	1	2	3	3	4	5	6	7	8
23	15G19CS020	CHANDRALA P. DESHPANDE	0	1	2	3	4	5	6	7	8
24	15G19CS021	CHARAN .S.	1	2	3	4	5	6	7	8	9
25	15G19CS022	CHETHANA R KARIGER	1	2	3	4	5	6	7	8	9

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12	13	Bengaluru - 960 057
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code: 18CTV59

Sl. No	USN	NAME	2024/25											
			10	10	10	11	11	11	12	12	12	12	12	12
1	15G19CSD03	CHITHRA . P.	0	1	2	3	4	5	6	7	8	9	8	
2	15G19CSD04	DEEKSHITH B.V	1	2	3	4	5	6	7	8	9	9	9	
3	15G19CSD05	DEEKSHITH G.D	1	2	3	4	5	6	7	8	9	9	9	
4	15G19CSD06	DEEPAK RAT	6	1	2	3	4	5	6	7	8	8	8	
5	15G19CSD07	DEEPTHI B.S	1	2	3	4	5	6	7	8	9	9	9	
6	15G19CSD08	DHANYA M SHETTY	1	2	3	4	5	6	7	8	9	9	9	
7	15G19CSD09	DIKSHA BHARDWAJ	0	1	2	3	4	5	6	7	8	8	8	
8	15G19CSD030	ETUKULAPATI MEDHANNA	1	2	3	4	5	6	7	8	9	8	8	
9	15G19CSD031	HARSHA H.J	1	2	3	4	5	6	7	8	9	8	8	
10	15G19CSD032	HARSHINI GIRISH MURTA	1	2	3	4	5	6	7	8	9	9	9	
11	15G19CSD033	HARSHITHA .C.	0	1	2	3	4	5	6	7	8	8	8	
12	15G19CSD034	HARSHITHA .J.	0	1	2	3	4	5	6	7	8	8	8	
13	15G19CSD035	HARSHITHA .V. ✓	1	2	3	4	5	6	7	8	9	8	8	
14	15G19CSD036	HITESH B.C.	0	1	2	3	4	5	6	7	8	8	8	
15	15G19CSD037	IIFA SHARIF	1	2	3	4	5	6	7	8	9	9	9	
16	15G19CSD038	JAGANTH N	1	2	3	4	5	6	7	8	9	9	9	
17	15G19CSD039	JYOTHI B	1	2	3	4	5	6	7	8	9	9	9	
18	15G19CSD040	K.G. LAKSHMINARAYAN	1	2	3	4	5	6	7	8	9	9	9	
19	15G19CSD041	K.V. BHAVYA	1	2	3	4	5	6	7	8	9	8	8	
20	15G19CSD042	KATIAL DAHITHA	1	2	3	4	5	6	7	8	9	9	9	
21	15G19CSD043	KAMINENT PRABHALIKA	0	1	2	3	4	5	6	7	8	8	8	
22	15G19CSD044	KARAN RAT	0	1	2	3	4	5	6	7	8	8	8	
23	15G19CSD045	KARTHIK .K.	1	2	3	4	5	6	7	8	9	9	9	
24	15G19CSD046	KAVYA .P.	1	2	3	4	5	6	7	8	9	9	9	
25	15G19CSD047	KEETHAV CHANDRA RAY	0	1	2	3	4	5	6	7	8	8	8	

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14CIV18/28

USN

Question Paper Version : A

First/Second Semester B.E Degree Examination, June/July 2015

Environmental Studies

(COMMON TO ALL BRANCHES)

Time: 2 hrs.]

[Max. Marks: 50]

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the fifty questions, each question carries ONE mark.
2. Use only Black ball point pen for writing / darkening the circles.
3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.
4. Darkening two circles for the same question makes the answer invalid.
5. Damaging/overwriting, using whiteners on the OMR sheets are strictly prohibited.

1. Nutrient cycling is most related to appropriately.
a) Energy, waste, nutrients
b) Autotrophs, nutrients, decomposers
c) Light, weight, nutrients
d) None of these
2. In an ecosystem, the flow of energy is
a) Bidirectional
b) Cyclic
c) Unidirectional
d) Multidirectional
3. Which of the following is not a part of the hydrological cycle?
a) Precipitation
b) Infiltration
c) Transpiration
d) Perspiration
4. The word 'Environment' is derived from
a) Greek
b) French
c) Spanish
d) English
5. Which of the following is the terrestrial ecosystem?
a) Forest
b) Grass land
c) Desert
d) All of these

6. Which of the following is not a part of atmosphere?
a) mesosphere
b) Heterosphere
c) Biosphere
d) stratosphere.

7. EIA study will help

a) maximizing the benefits without over loading the planet ecosystem.

b) To estimate the future needs of the society

c) To smooth implementation of the project.

d) To cope up with rapid growth of population

8. Sustainable development means
 a) Meeting present needs without compromising on the future needs.
 b) Progress in human well beings.
 c) Balance between human needs and the ability of earth to provide the resources.
 d) All of these.
9. Mineral resources are
 a) Renewable
 b) Non renewable
 c) Equally distributed
 d) None of the above
10. India has the largest share of which of the following?
 a) Manganese
 b) Mica
 c) Copper
 d) Diamond
11. Fluoride though is an effective agent to preventing dental caries, has a maximum permissible limit of
 a) 0.5 mg/l of water
 b) 1.5 mg/l of water
 c) 5 mg/l of water
 d) 15 mg/l of water
12. Carbon content is higher in
 a) Soil
 b) Atmosphere
 c) Water
 d) Lining matter
13. Cholera and typhoid are caused by
 a) Worms
 b) Virus
 c) Bacteria
 d) Fungus
14. The required iron content in drinking water as specified by BIS is
 a) 300 mg/l
 b) 30 mg/l
 c) 3 mg/l
 d) 0.3 mg/l
15. Major source of fluoride is
 a) River water
 b) Tooth paste
 c) Ground water
 d) Food products
16. LPG is a mixture of
 a) N_2 and H_2S
 b) CO_2 and N_2
 c) Propane and butane
 d) Methane and ethane
17. Nuclear fusion reaction occurs in
 a) The sun
 b) Stars
 c) Hydrogen bomb
 d) All the these
18. Choose the sequence of production of electricity from hydrogen
 i) Electrolysis of water
 ii) Performing a fuel cell reaction
 iii) Storage of hydrogen
 a) (i), (ii), (iii)
 b) (i), (iii) and (ii)
 c) (ii), (iii) and (i)
 d) (ii), (i) and (iii)
19. Chernobyl nuclear disaster occurred in the year
 a) 1984
 b) 1952
 c) 1986
 d) 1987
20. Which resources are inexhaustible?
 a) renewable
 b) fossil fuel
 c) non renewable
 d) mineral
21. Direct conversion of solar energy is attained by
 a) Solar photo voltaic system
 b) Solar diesel hybrid system
 c) Solar thermal system
 d) Solar air heater

14CIV18/28

Which place in India the tidal energy has been experimented?

- a) Goa b) Karnataka c) Kerala d) Tamil Nadu

Hydrogen energy can be tapped through

- a) heat pumps b) fuel cells c) photovoltaic cells d) gasifiers

Molasses from sugar industry is used to generate

- a) biodiesel b) hydrogen c) bioethanol d) biomethanol

5. Bhopal gas tragedy caused due to the leakage of

- a) Methyl ISO Cyanate (MIC) b) Methane
c) Sulphur dioxide d) Carbon monoxide

26. Noise pollution limits at residential area

- a) 80 dB b) 45 dB c) 60 dB d) 90dB

Ozone layer is present in

- a) Troposphere b) Stratosphere c) Mesosphere d) Thermosphere

8. Odour in water can be removed by

- a) Aeration b) Changing pH c) Sedimentation d) None of these

9. Which of the following is an air pollutant:

- a) Oxygen b) Particulate matter c) Nitrogen d) Carbon dioxide

10. The protocol that reduces green house gas emission is

- a) Kyoto protocol b) Montreal protocol c) Vienna protocol d) Basal protocol

1. The process of movement of nutrients from the soil by acid rain is called

- a) Transpiration b) Thermosphere c) Infiltration d) Leaching

2. Which of the following is not a method for water conservation:

- a) rain water harvesting b) reducing water usage
c) ground water extraction d) water recycling

3. Smog is

- a) natural phenomenon b) combination of smoke and fog
c) colourless d) all of these

4. The wild life protection act in India was passed in

- a) 1978 b) 1972 c) 1986 d) 1992

5. Air (prevention and control of pollution) Act in India was passed in

- a) 1970 b) 1975 c) 1981 d) 1999

6. The Tiger conservation project was started in the year

- a) 1973 b) 1984 c) 1999 d) 2004

37. The leader of "Chipko movement" is

- a) Sunderlal Bahuguna b) vandana shiva
c) medha patkar d) suresh Heblikar

38. "Earth day" is observed on
 a) 1st December b) 5th June c) April 22nd d) 1st January
39. The committee which submitted its report to government of India on environmental education
 a) Tiwari Committee b) Mehta Committee
 c) Banerjee Committee d) Agarwal Committee
40. BOD means
 a) Biochemical oxygen demand b) Chemical oxygen demand
 c) Biophysical oxygen demand d) All of these
41. The pH value of the acid rain water is
 a) 5.7 b) 7.0 c) 8.5 d) 7.5
42. Ozone layer thickness is measured in
 a) PPM b) PPB c) Decibels d) Dobson units
43. Eutrophication is
 a) An improved quality of water in lakes
 b) A process in carbon cycle
 c) The result to accumulation of plant nutrients in water bodies
 d) A water purification technique.
44. Wind energy generation depends on
 a) direction of wind b) velocity of wind.
 c) humidity d) precipitation
45. Nitrate concentration above 45 mg/l causes
 a) Vomiting b) Dysentery
 c) Typhoid d) Blue Baby disease
46. Ozone hole is said to occur when the ozone level decreases below
 a) 200 Du b) 2000 Du c) 20 Du d) 2 Du
47. Acid rain can be controlled by
 a) reducing SO₂ and NO₂ emissions b) reducing CO and hydrocarbons emissions
 c) Increasing number of lakes d) None of these
48. Animal husbandry may result in
 a) Global warming b) Acid rain
 c) Ozone depletion d) None of these
49. Freons are
 a) HFC b) CFC c) NFC d) Hydrocarbons
50. Ozone hole was first discovered over
 a) Arctic b) Antartica c) Tropical region d) Africa
