Criterion I

Curricular Aspects

RCMAS

RAJAGIRI COLLEGE OF MANAGEMENT AND APPLIED SCIENCES

RAJAGIRI VALLEY P.O, KAKKANAD, KERALA 682039

An ISO 9001 : 2015 Certified Institution

Affiliated to Mahatma Gandhi University, Kottayam and Approved by AICTE

1.3 Curriculum Enrichment

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values and Environment and Sustainability in transacting curriculum

Environment and Sustainability Issues addressed in Curriculum

Submitted to NAAC

INDEX

List of Courses addressing issues relevant to Environment and Sustainability into the Curriculum

Name of Programme	Name of Course	Course Code	Course Description
B.A English Literature, Communication and Journalism Model III (Triple Main)	Issues that Matter	EN2CCT03	This course provides an interdisciplinary examination of critical environmental issues and sustainable practices. By integrating scientific, social, and economic perspectives, this course fosters a holistic understanding of sustainability and promotes active participation in creating a sustainable future.
B.A English Literature, Communication and Journalism Model III (Triple Main)	Environmental Science and Human Rights	EN5CRENT01	It analyzes the complex relationship between environmental issues and human rights, fostering awareness and advocating for responsible stewardship of the planet
Bachelor of Computer Application	IT & Environment	CA5CRT15	This course explores the interdisciplinary nature of environmental studies and the integration of information technology in addressing environmental issues. It covers the sustainable management of natural resources, biodiversity conservation, environmental pollution, social issues, the role of IT in education and society, and human rights
Bachelor of Business Administration	Environment Science and Human Rights	BA5CRT23	This interdisciplinary course explores the intricate relationship between environmental science and human rights, emphasizing the impact of environmental issues on human well-being and rights. Students will examine the scientific basis of environmental challenges and their socio-economic and political implications, focusing on how

			environmental degradation affects human rights and exploring solutions to promote sustainability and justice
B.Com	Environment Management and Human Rights	CO5CRT15	This course integrates environmental sustainability through natural resource management, pollution control, and human rights advocacy, promoting responsible stewardship and sustainable practices.

COURSE3-IssuesthatMatter

Course Code	EN2CCT03
Title of the course	IssuesthatMatter
Semester in which the course is to be taught	2
No. of credits	4
No. of contact hours	90

1.AimoftheCourse:

To sensitize the learners about contemporary issues of concern: to enhance their linguistic skills in English language.

Objectives:

By the end of the course, the learner is able to

- identify major issues of contemporary significance
- respond rationally and positively to the issues raised
- internalise the values imparted through the excerpts
- re-orient himself/ herself asconscious, cautious, concerned, conscientious and concerned human being and
- articulate these values in error free English.

2.CourseOutline:

Module1 **(18hours)**

1. TheUnsurrendered People - Kenzaburo Oe
2. The Old Prison – Judith Wright
3. War– Luigi Pirandello

Module2 **(18hours)**

4. Persuasions on the Power of the Word - Salman Rushdie

Peril - Toni Morrison

5. The Burning of the Books- Bertolt Brecht

6. The Censors - Luisa Valenzuela

Module3 **(18hours)**

7. "The Poisoned Bread" – Bandhumadhav

8.*AWestwardTrip-ZitkalaSa*

9. "The Pot Maker" – TemsulaAo

Module4 **(18hours)**

10. Does it Matter – Richard Leaky

11. On Killing A Tree - Gieve Patel

12. Hagar: A Story of a Woman and Water (Gift in Green |chapter 2|) – Sarah Joseph

Module5 **(18hours)**

13.Understanding Refugeeism: An Introduction to Tibetan Refugees in India

14.Refugee Blues – W. H. Auden

15. The Child Goes to the Camp(from Palestine's Children)– GhassanKanafani

CoreText:ISSUESTHATMATTER

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MAHATMAGANDHIUNIVERSITY

SYLLABIFORCORECOURSES-UGPROGRAMMES

2017ADMISSIONSONWARDS

COURSE–EnvironmentalScienceandHumanRights

Course Code	EN5CRENT01
Title of the course	EnvironmentalScienceandHumanRights
Semesterinwhichthecourseistobe taught	5
No. of credits	4
No. of contact hours	90

CoremodulesyllabusforEnvironmentalStudies&HumanRightsforunder-graduatecoursesofallbranchesofhighereducation

VISION

The importanceof environmental science and environmental studies cannotbe disputed. Theneec forsustainable development is a keyto the future of mankind. Continuingproblems of pollution, solid waste disposal, degradation of environment, issues like economic productivityand national security, Global warming, the depletion of ozone layer and loss of biodiversityhave made everyoneaware of environmental issues. The United Nations Conferenceon Environment and Development held in Rio de Janerio in 1992 and World Summit on SustainableDevelopment at Johannesburgin 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment.It is clear that no citizen of the earth can afford to be ignorant of environmentissues.

India is rich in biodiversitywhich provides various resourcesfor people. Onlyabout 1.7 million livingorganisms have been described and namedglobally. Still manymore remain to be identified and described. Attemptsaremadeto conservethem in ex-situ and in-situ situations. Intellectual propertyrights (IPRs) have become important in a biodiversity-rich countrylike India to protect microbes, plants and animals that haveuseful genetic properties. Destruction of habitats, over-use of energyresource and environmental pollution has been found to

responsiblefor the loss of a large number of life-forms.It is feared that a large proportion of life on earth may get wiped out in the near future.

In spite of thedeteriorating status of the environment, studyof environment has so far not received adequate attention in our academic programme. Recognizing this, the Hon'bleSupreme Court directed theUGC to introduceabasic course on environment at everylevel in college education. Accordingly, the matter wasconsideredbyUGCand it was decided that a six months compulsory coremodule coursein environmental studies maybepreparedand compulsorily implemented in all the University/Colleges of India.

The syllabus of environmental studies includes five modules includinghuman rights. The first two modules arepurelyenvironmental studies accordingto the UGC directions.The second two modules arestrictlyrelated with the coresubject and fifth module is for human rights.

OBJECTIVES

Environmental Education encourages students to research, investigate howand whythings happen, and make their own decisions about complexenvironmental issues bydeveloping and enhancing critical and creative thinkingskills.Ithelps to foster anewgeneration of informed consumers, workers, aswell as policyor decision makers.

EnvironmentalEducation helps students to understand how their decisionsand actions affectthe environment, builds knowledge and skills necessaryto address complex environmentalissues, as well as ways we can take action to keep our environment healthyand sustainable for the future.It encourages characterbuilding, and develops positive attitudes and values.

To develop the senseof awareness amongthe students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps toprotect the nature and natural resources.

To help the students in acquiringthe basic knowledge about environment and the social norms that provides unitywith environmental characteristics and create positive attitude about the environment.

Module1 **(18hours)**

Unit1: Multidisciplinarynatureof environmental studies- Definition, scope and importance Need for public awareness.

Unit2: Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems.
a) Forest resources: Useand over-exploitation, deforestation: case studies-Timber extraction, mining, dams and their effects on forest and tribalpeople.

b) Water resources: Useand over-utilization of surface and ground water, floods, drought, conflicts overwater, dams-benefits and problems.
c) Mineral resources: Use and exploitation, environmental effects of extracting and usingmineral resources: case studies.
d) Food resources: World food problems - changes causedbyagriculture and overgrazing-effects of modern agriculture – fertilizer & pesticide problems– water logging – salinity: case studies.
e) Energy resources: Growing energyneeds - renewable and non renewable energysources- use of alternate energysources: casestudies.
f) Land resources:Land as a resource- land degradation - man induced landslides– soil erosion and desertification.
Role of individual in conservation of natural resources - Equitable use of resources for sustainablelifestyles.

Unit3: Ecosystems
Conceptof an ecosystem- Structure and functionof an ecosystem- Producers, consumers and decomposers - Energyflow in the ecosystem.
Ecological succession - Food chains, food webs and ecological pyramids.
Introduction, types, characteristic features, structure and function of thegiven ecosystem-Forest ecosystem

ModuleII **(26hours)**

Unit1: Biodiversityand its conservation
Introduction - Bio-geographical classification ofIndia
Value ofbiodiversity: consumptive use, productive use,social, ethical, aesthetic and option values.
India as a mega-diversity nation.
Hot-sports of biodiversity
Threats to biodiversity: habitat loss, poachingofwildlife, man-wildlifeconflicts - Endangered and endemicspecies ofIndia

Unit2: Environmental Pollution
Definition - Causes, effects and control measuresof: Air pollution- Water pollution - Soil pollution - Marine pollution - Noisepollution - Thermal pollution- Nuclear hazards
Solid Waste Management: Causes, effects and control measures of urban and industrial wastes
Role of an individual in prevention of pollution- Pollution casestudies
Disaster management: floods, earthquake, cyclone and landslides

Unit3: Social Issues and the Environment
Urban problems related to energy- Water conservation, rain water harvesting, watershed

management
Resettlement and rehabilitation of people: its problems and concerns: case studies
Environmental ethics:Issues and possible solutions
Climate change, global warming, acid rain, ozone layer depletion , nuclear accidents and holocaust: casestudies -Consumerism and waste products

Environment Protection Act - Air (Prevention and Control of Pollution) Act– Water (Prevention and control of Pollution) Act - Wildlife Protection Act - Forest Conservation Act
Issues involved in enforcement of environmental legislation- Public awareness

ModuleIII **(10hours)**

Jean Giono: *TheManWhoPlantedTrees*

K. Satchitanandan: Hiroshima Remembered

ModuleIV **(10hours)**

Bessie Head: Heaven is not Closed

Safdar Hashmi:Machine

ModuleV **(26hours)**

Unit1: Human Rights
An Introduction to Human Rights: Meaning, concept and development- ThreeGenerations of Human Rights (Civil and Political Rights, Economic, Social and Cultural Rights).

Unit2: Human Rights and United Nations
Contributions, main human rightsrelated organs -UNESCO, UNICEF, WHO,ILO, Declarations for women and children,Universal Declaration ofHuman Rights.

Human Rights inIndia –Fundamental rights andIndian Constitution, Rights forchildren and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes andMinorities

Unit3: Environment and Human
RightsRightto Clean Environment and Public
Safety
Issues ofIndustrial Pollution- Prevention, Rehabilitation and SafetyAspect of New Technologies such as Chemical and Nuclear Technologies -Issues of Waste Disposal - Protection of Environment

Conservation of naturalresourcesand human rights: Reports, Casestudies and policy formulation.

Conservation issues of Western Ghats: Mention Gadgil committee report.KasthuriRangan report.
Over-exploitation of ground waterresources, marine fisheries, sand mining, etc.

Internal:Fieldstudy

Visit to a local area to document environmental grassland/hill /mountain
Visit a local polluted site: Urban/Rural/Industrial/Agricultural Studyofcommon plants, insects, birds, etc
Studyof simple ecosystem: pond, river, hill slopes, etc
(Field workEqual to 5 lecturehours)

REFERENCES

BharuchaErach. Text Book of Environmental Studies forundergraduate Courses. University Press, IInd Edition 2013 (TB)

Clark.R.S., MarinePollution, Clanderson Press Oxford (Ref)

Cunningham, W.P.Cooper, T.H.Gorhani, E& Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p .(Ref)

Dc A.K.Enviornmental Chemistry, WileyEasternLtd.(Ref)

Down to Earth, Centre for Science and Environment (Ref)

Heywood, V.H & Watson, R.T. 1995. Global BiodiversityAssessment, Cambridge University Press 1140pb (Ref)

Jadhav.H&Bhosale.V.M. 1995. Environmental Protection andLaws. Himalaya Pub. House, Delhi 284p (Ref)

Mekinney, M.L&Schock.R.M. 1996 Environmental ScienceSystems &Solutions, Web enhanced edition639p (Ref)

Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)

Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)

Rao.M.N&Datta.A.K. 1987 Waste Watertreatment Oxford &IBHPublication Co.Pvt.Ltd.345p (Ref)

Rajagopalan, R. Environmental Studies from crisis and cure.Oxford UniversityPress, Publish 2016 (TB)

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CA5CRT15 - IT & Environment (Core)

Theory:4 hrs. per week
Credits:4

Unit 1 : (18 hrs)

Multidisciplinary nature of environmental studies : Definition, scope and importance. Need for public awareness. **(2 hrs)**

Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems. a) **Forest resources**: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b) **Water resources**: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) **Mineral resources**: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) **Food resources**: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e) **Energy resources**: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies. f) **Land resources**: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of individual in conservation of natural resources. Equitable use of resources for sustainable life styles. **(10hrs)**

Ecosystems : Concept of an ecosystem. Structure and function of an ecosystem. Producers, consumers and decomposers. Energy flow in the ecosystem. Ecological succession. Food chains, food webs and ecological pyramids . Introduction, types, characteristic features, structure and function of the given ecosystem:- Forest ecosystem
(6 hrs)

Unit 2: (26 hrs)

Biodiversity and its conservation: Introduction. Biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.. India as a mega-diversity nation, Hot-sports of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India
(8 hrs)

Environmental Pollution :Definition, Causes, effects and control measures of: - Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies, Disaster management. flo earthquake, cyclone and landslides. **(8 hrs)**

Social Issues and the Environment :Urban problems related to energy. Water conservation. rain water
harvesting. watershed management. Resettlement and rehabilitation of people: its problems and concerns.
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Case studies. Environmental ethics: Issues and possible solutions. Climate change, global warming. acid
rain. ozone layer depletion . nuclear accidents and holocaust. Case studies. Consumerism and waste
products. Environment Protection Act , Air (Prevention and Control of Pollution) Act. Water
(Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues
involved in enforcement of environmental legislation. Public awareness. **(10hrs)**

Unit 3: (10 hrs.)

Internet as a knowledge repository, academic search techniques, creating cyber presence. Academic
websites, open access initiatives, opens access publishing models. Introduction to use of IT in
teaching and learning -Educational software, Academic services–INFLIBNET, NPTEL. NICNET,
BRNET **(10hrs)**

Unit 4: (10 hrs.)

IT & Society- issues and concerns- digital divide, IT & development, the free software movement , IT
industry: new opportunities and new threats, software piracy, cyber ethics, cyber crime. cyber threats,
cyber security, privacy issues, cyber laws, cyber addictions, information overload, health issues- guide
lines for proper usage of computers, internet and mobile phones, e-wastes and green computing, impact
of IT on language & culture-localization issues- Unicode- IT and regional languages, Green Computing
Concept. **(10hrs)**

Unit 5: (8 hrs.)

Human Rights– An Introduction to Human Rights. Meaning, concept and development. Three
Generations of Human Rights (Civil and Political Rights: Economic, Social and Cultural Rights).
Human Rights and United Nations – contributions, main human rights related organs - UNESCO,UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of
Human Rights. **Human Rights in India** – Fundamental rights and Indian Constitution. Rights for
children and women. Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities
Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of
Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical
and Nuclear Technologies. Issues of Waste Disposal. Protection of Environment

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Conservation of
natural resources and human rights: Reports. Case studies and policy formulation Conservation issues
of western ghats- mention Gadgil committee report. Kasthurirengan report. Over exploitation of ground
water resources. marine fisheries. sand mining etc. **(8 Hrs)**

Internal: Field study

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants. insects. birds etc

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- Study of simple ecosystem-pond. river. hill slopes. etc

(Field work Equal to 5 lecture hours)

References:

1. "Technology in Action" Alan Evans. Kendall Martin. Mary Anne Poatsy. Pearson
2. Bharucha Erach. Text Book of Environmental Studies for undergraduate Courses. University
Press. IInd Edition 2013 (TB)
3. Clark R.S . Marine Pollution. Clanderson Press Oxford (Ref)
4. Cunningham. W.P.Cooper. T.H.Gorhani. E & Hepworth. M.T.2001 Environmental Encyclopedia.
Jaico Publ. House. Mumbai. 1196p .(Ref)
5. De A.K.Environmental Chemistry. Wiley Eastern Ltd (Ref)
6. Down to Earth. Centre for Science and Environment (Ref)
7. Heywood. V.H & Watson. R.T. 1995. Global Biodiversity Assessment. Cambridge University
Press 1140pb (Ref)
8. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House.
Delhi 284p (Ref)
9. Mckinney. M L & Schock R M 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
10. Miller T G. Jr.. Environmental Science. Wadsworth Publishing Co. (TB)
11. Odum E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
12. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBH Publication Co Pvt Ltd.345p
(Ref)
13. Rajagopalan. R. Environmental Studies from crisis and cure. Oxford University Press. Published.
2016 (TB)
14. Sharma B.K.. 2001. Environmental Chemistry. Geol Publ. House. Meerut (Ref)
15. Townsend C.. Harper J. and Michael Begon. Essentials of Ecology. Blackwell Science (Ref)
16. Trivedi R.K.. Handbook of Environmental Laws. Rules Guidelines. Compliances and Stadards.
Vol I and II. Enviro Media (Ref)
17. Trivedi R. K. and P.K. Goel. Introduction to air pollution. Techno-Science Publication (Ref)

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18. Wanger K.D.. 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p
(Ref)
19. M-Magazine. R-Reference TB- Text Book

BASCRT23 ENVIRONMENT SCIENCE AND HUMAN RIGHTS

Core Course
No. of credit : 4
No. of contact hour: 5

MODULE I

Multidisciplinary nature of environmental studies
Definition, scope and importance Need for public awareness.
Natural Resources : Renewable and non-renewable resources : Natural resources and associated problems.
a) Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, Case studies.
f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification

- Role of individual in conservation of natural resources.
- Equitable use of resources for sustainable life styles.

Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the given ecosystem:- Forest ecosystem

MODULE II

Biodiversity and its conservation
Introduction, Biogeographical classification of India ,Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. India as a mega-diversity nation, Hot-sports of biodiversity, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India

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Environmental Pollution

Definition, Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

Solid waste Management: Causes, effects and control measures of urban and industrial wastes, Role of an individual in prevention of pollution, Pollution case studies, Disaster management: floods, earthquake, cyclone and landslides

Social Issues and the Environment- Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of people: its problems and concerns, Case studies, Environmental ethics: Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case studies, Consumerism and waste products, Environment Protection Act , Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act,Issues involved in enforcement of environmental legislation

MODULE III

Introduction to Environment and Business

Introduction of ways in which business has and is responding to environmental and business issues; business and sustainable development; issues of corporate/business greening.

MODULE IV

Green entrepreneurship

What is green entrepreneurship, definition, meaning, scope, nature and characteristics. Green entrepreneurship in India. Difference between conventional and green entrepreneurship.

MODULE V

Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Human Rights and United Nations – contributions, main human rights related organs - UNESCO,UNICEF, WHO, ILO. Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal Protection of Environment

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Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasthurirengan report. Over exploitation of ground water resources, marine fisheries, sand mining etc.

Internal: **Field study**

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc

(Field work Equal to 5 lecture hours)

REFERENCES

1. Bharucha Erach. Text Book of Environmental Studies for undergraduate Courses. University Press. IInd Edition 2013 (TB)
2. Clark.R.S., Marine Pollution, Clanderson Press Oxford (Ref)
3. Cunningham. W.P.Cooper. T.H.Gorhani. E & Hepworth. M.T.2001 Environmental Encyclopedia. Jaico Publ. House. Mumbai. 1196p .(Ref)
4. De A.K.Enviornmental Chemistry. Wiley Eastern Ltd.(Ref)
5. Down to Earth. Centre for Science and Environment (Ref)
6. Heywood. V.H & Watson. R.T. 1995. Global Biodiversity Assessment. Cambridge University Press 1140pb (Ref)
7. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House. Delhi 284p (Ref)
8. Mekinney. M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
9. Miller T.G. Jr.. Environmental Science. Wadsworth Publishing Co. (TB)
10. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
11. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBH Publication Co.Pvt.Ltd.345p (Ref)
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13. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House. Meerut (Ref)
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