B.SC (HONS) ENVOROMENTAL SCIENE

| FIRST SEMESTER | | |
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| paper | Subject | **CONTENTS** |
| PAPER-1 | English without tears | TRUTH AND NON-VIOLENCE,THE SOUL OF ALL RELIGIONS IS ONE, DARIDRANARAYAN, WHAT INDIA STANDS FOR, DEMOCRACY, TO STUDENTS, FOR THE GOOD OF THE INDIVIDUAL, ASSIGNMENTS, ESSAY WRITING, COMPREHENSION, PRECIS WRITING, LETTER WRITING, PREPOSITIONS, FIXED PREPORATION WITH VERBS, IDIOMS, SUBSTITUTION OF WORDS, ONE WORD SUBSTITUTIONS, COMMON ERRORS, HISTORY OF ENGLISH LANGUAGE, FOREIGN LANGUAGE EDUCATION |
| PAPER-II | The Ecological system | **Unit1**: **Scope and components of environmental studies**.<br>Introduction, environment, classification of environment, Factors influencing environment, components of environment, environmental resources, environmental degradation, environmental management, environmental impact assessment, methods of environmental impact assessment<br>**Unit2**:**Ecology**<br>Introduction, objectives of ecology, classification of ecology, ecological factors, climatic factors, edaphic factors, topographic factors, biotic factors, limiting factors, laws of limiting factors, ecological balance, ecosystem instability, ecological concept and principles.<br>**Unit3**: **Ecosystem and its structures**.<br>Intro., kinds of ecosystem, components of ecosystem, biotic components, abiotic components, ideal ecosystem, major ecosystem, pond ecosystem, grassland ecosystem, forest ecosystem, desert ecosystem, process in ecosystem, operation in ecosystems, energy flow in ecosystem, food chain, food web, ecological pyramids, productivity, biogeochemical cycles, hydrologic cycle, gaseous cycles, sedimentary cycles, community, ecological succession , causes, characteristics, types of succession, general processes of succession. |
| PAPER-III | Natural Resources Management | **Unit 1**: **natural Resources management**.<br>Introduction, natural resources: definition, land, water, agriculture, forests, rangeland, wildlife.<br>**Unit 2**: **Natural Resources**<br>Introduction, classification of resources, land or soil resources, formation of soil, soil erosion, water resources, sources of fresh water, mineral resources, renewable and nonrenewable resources, energy resources, nonconventional energy resources.<br>**Unit3**: **Biodiversity and its Conservation**<br>Concept of biodiversity, types of biodiversity, biodiversity of india, importance of biodiversity, threats to biodiversity, conservation of biodiversity, conservation methods, hot spots.<br>**Unit 4**: **environmental pollution**.<br>Introduction, pollutants, types of pollutants, agents causing pollution, classification of pollution, general effects of pollution, radiation pollution, sources of radiation pollution, effects of radiation pollution, control of radiation pollution, thermal pollution, sources of thermal pollution, effects of thermal pollution, industrial pollution, control of industrial pollution, biological concentration and bio-magnification, sewage and sewage treatment. |
| **SECOND SEMESTER** | | |
| PAPER-1 | Pollution and its Control | **Unit 1: Air Pollution and its Control**<br>Atmosphere, structure of atmosphere, composition of atmosphere, energy balance, air pollution, classification of air pollutants, sources of air pollution, some important air |

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| | | pollutants, carbon monoxide, sulphordioxide, nitrogen oxide, hydro carbons, particulates, effects of air pollution, consequences of air pollution, smog, acid rain, control of air pollution, air quality standars.<br>**Unit 2**: **Water pollution and its control**.<br>Hydrosphere, importance of water, sources of water, uses of water, water pollution, sources of water pollution, types of water pollution, general effects of water pollution, classification of water pollution, natural water and its quality, water quality parameters and standards,<br>**Unit 3**: **land pollution and its control**.<br>Lithosphere or pedosphere, classification of soil, soil profile, composition of soil, soil organism, uses of soil, land pollution or terrestrial pollution, sources of land pollution, detrimental effects of land pollution, disposal of solid waste, minimization of solid waste, management of solid waste.<br>**Unit4**: **Noise pollution and its control.**<br>Noise, sources of noise pollution, effects of noise pollution, permissible noise levels, prevention and control of noise pollution. |
| PAPER-II | Environmental Management | **Unit 1: introduction to environmental management**.<br>Introduction, water management in peri-urban areas.<br>**Unit 2**: **environmental management**.<br>Concept of environmental management, scope and aspects of environmental management, management of resources, forest resource management, water resource management, mineral resource management, land resource management, energy resource management, wildlife management, agriculture resource management, waste management, disaster management, concept of sustainable development,<br>**Unit 3: environmental laws**<br>Constitutional provision, some important environmental laws, central pollution control board(CPCB), state pollution control board(SPCB), miscellaneous environmental acts and rules.<br>**Unit 4: human population and environmental problems.**<br>Introduction, human being, a rational and social partner in environmental action, impact of human activities on environment, environmental problem of urban areas, environmental problem of rural areas, stress on civic amenities, population, population explosion, population explosion in india, family welfare programme, population variation among nations, environment and human health, sanitation, diseases, types of disease transmission, contagious and infectious diseases, classification of diseases on the basis of transmission, importance of immunization, AIDS and HIV, role of information technology in environment, value education, women and child care, human rights. |
| PAPER-III | Environmental Science today | **Unit 1: The environment**.<br>Introduction, atmosphere, hydrosphere, lithosphere or pedosphere, biosphere.<br>**Unit 2: Ecology.**<br>Introduction, light, temperature, water, wind, edaphic factors, biotic factors, limiting factors, Ecological adaptations in plants and animals.<br>**Unit 3: Eco-systems and its structures.**<br>Introduction, light, temperature, water wind, edaphic factors, biotic factors, limiting factors, Ecological adaptations in plants and animals.<br>**Unit 4: Bio-geochemical cycles**.<br>Introduction, hydrological cycle, application of hydrologic cycle, gaseous cycle, oxygen cycle, nitrogen cycle, sedimentary cycle, sulphur cycle, phosphorous cycle.<br>**Unit 5**: **Population ecology**<br>introduction, population density, natality(birth rate), mortality(death rate), age structure, life table, biotic potential, survivorship curves, population growth curve, population dispersion, community, ecological succession. |

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| | | **Unit 6: Environmental pollution**.<br>Introduction, pollutants, air pollution, water pollution, terrestrial pollution, noise pollution, radiation pollution, industrial pollution , chemical pollutants, nitrogen oxide, biological concentration and bio-magnification, sewage and sewage treatment, ozone layer depletion, green house effect, smog acid rain |
| PAPER-IV | India's Environment | **Unit 1**: **conservation of natural resources.**<br>Introduction, need for conservation of resources, social forestry, deforestation, threat to the future of mankind, co0nservation of forests: its rationable, water resources, soil resources, energy resources, bio-diversity, wild life, national parks, sanctuary, phyto-geographical regions of india.<br>**Unit 2**: **water and irrigation.**<br>Introduction, occurrence, composition of water, properties of water, sources of water in nature, classification of natural water, purification of natural water for drinking purposes, hard and soft water, causes of hardness, kinds of hardness, softening of water, disadvantages of hard water, water and man, water and plants, water and climate, importance of safe drinking water, importance of irrigation in india, types of sources, irrigation and power projects in india, irrogation in the eight plan(92-97), benefits of irrigation, defects of irrigation.<br>**Unit 3: environmental planning and managements.**<br>Introduction, problems in maintaining ecological balance, waste land management, air purification and uses, problems due to mining, biosphere, environmental education.<br>**Unit 4**: **Environmental policy**.<br>Introduction, water act, air act, the environment protection act 1986, general power of the central government, prevention, control and abetment of environment, miscellaneous, c.raman menon, notification.<br>**Unit 5: public health**<br>introduction, water and how to purify it, how to purify water?, water: the liquid of life, relevance of primary health care, how does the water get polluted?, health hazard due to water pollution, making water hygienic, diseases, difference between contagious and infectious diseases, mechanism of spreading the diseases, modes of disease transmission, dirty hands, food and drinks, food sanitation, food hygiene, importance of immunization, the lurking killers, influenza, pneumonia, measles, chicken-pox, whoopo=ing cough.<br>**Unit6: bio-statics.**<br>measures of central tendency, arithmetic mean, average, mode, median, quartiles, standard error mean.<br>**Unit 7:disaster and environment**<br>introduction, environment and Indian economy, floods, drought or famine, earthquakes, cyclones, measures required to tackle the situation. |
| **THIRD SEMESTER** | | |
| PAPER-1 | Environmental Economics | **Unit 1**: concepts of environmental economics.<br>Basic concept, environment, natural resources, ecology, ecosystem-meaning and types, environmental economics, meaning, subject matter of environmental economics, nature and scope of environmental economics,<br>**Unit 2: Ecological economics**.<br>Nature, introduction, bio economics and spatial economics, ecology and economic growth, approaches to ecological economics, steady state approach, environmental utilization space, ayres-kneese's material balance model, economy, ecology and environmental interaction, introduction, leontief's abatement model, the economics of recycling and waste management, economics of recycling, solid wastes, industrial wastes, nuclear wastes, the problem of waste management in developing countries, sustainable management of waste, the impact of mismanagement of waste, waste management hierarchy, solid wastes in india, energy and ecological problem, energy as |

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| | | a factor of production, the energy crisis, alternative sources of energy, energy problems in developing countries, energy efficiency and clean technologies, biodiversity crisis-introduction, value of biological diversity, measures for conservation and sustainable use of bio diversity, wildlife trade, project tiger, project elephant, sustainable tourism-introduction, tourism impact on environment, sustainable tourism development, strategies for sustainable tourism in LDCS, eco-tourism certification underdifferent schemes.<br>**Unit 3: welfare criteria and environmental analysis.**<br>Pareto criterion, pigovian analysis of externalities, meaning of externalities, pigovian taxes and subsidies, compensation criterion, social choice and justice, social choice and individual values, theory of justice, property rights and coase theorems, meaning, environmental quality as a public good, public goods, public bads, market failure, meaning<br>**Unit 4: economic growth and environment.**<br>The costs of economic growth, The costs of economic growth and environmental degradation, the limits of growth model, introduction, the model, environmental quality and economic development, environmental Kuznets hypothesis.<br>**Unit 5: sustainable development**.<br>Sustainable development-introduction, meaning, sustainable development rules, indicators and measures of sustainable development. |
| PAPER-II | Sustainable Development | **Unit 1: introduction to sustainable industrialization**.<br>Meaning of sustainable industrialization, green marketing, clean technology of production and transfer of technology, meaning of clean technology, clean technology of production for small scale industries, transfer of technology, environmental management system and auditing, international standards, basics requirement for implementing ISO 900, ISO 9000 series of standards, ISO 14000, environmental auditing.<br>**Unit 2: land degradation and sustainable agriculture.**<br>land degradation and environmental costs of pesticide use, introduction, land degradation, environmental costs of pesticides, the insecticides act 1968 and insecticides rules 1971, food security-meaning, need for food security, sustainable agricultural management-meaning, approaches to sustainable agriculture management,<br>**unit 3: human population and environment**<br>some theories of p[population, the Malthusian theory, theory of demographic transition, population growth in india-introduction, size and growth rate of population, birth rate and death rate, polulation explosion,<br>**unit 4: population policy in india**.<br>Population policy in india- introduction, government policy to control population growth, national population policy 2000, progress in the milestone of the population policy of india.<br>**Unit 5: family planning on india.**<br>Family planning in india-introduction, meaning, need for family planning, strategies and outcome, achievement of family planning or family welfare programme, criticism, suggestion to improve and expand.<br>**Unit 6: trends of world population.**<br>trends of world population- introduction, unequal distribution of world population, recent trends in world population:1950-95 and projections for 2000-2025.<br>**Unit 7: hiv/aids in developing countries**.<br>hiv/aids in developing countries-introduction, protective and preventive measures, prevention and control of aids in india.<br>**Unit 8: population and environment linkages.**<br>Introduction, population growth and environmental linkages, policy measures<br>**Unit9: environment and human health**<br>Introduction, health problems in underdeveloped countries, india's tenth plan |

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| | | strategies<br>**Unit 10: women religion and environmental human rights.**<br>Introduction, women and natural resources, social sustainability, women and child welfare schemes in india<br>**Unit 11: religion and environment.**<br>religion and environment<br>**Unit 12: environmental human rights and ethics.**<br>Environmental human rights and ethics. |
| PAPER-III | Resource Economics | **Unit 1: economics of natural resources management**<br>economics of natural resources management-introduction, approaches to natural resources, role of natural resources in economic development, fishery management, theories of natural resources.<br>**Unit2: forest resources.**<br>forest resources-introduction, role of forests in economic development, over-exploitation of forests, forests management, collective participatory forest management.<br>**Unit3: water resources.**<br>water resources-introduction, water resources planning, problems of water supply in underdeveloped areas, sustainable water management.<br>**Unit4: interlinking of Indian rivers and rehabilitation problem.**<br>interlinking of Indian rivers and rehabilitation problem, conflicts over water<br>**Unit 5: mineral resources.**<br>Mineral resources-introduction, use and exploitation of mineral resources in udcs, environmental cost of extracting mineral resources, environmental impacts of mineral resources extraction and use, measures for sustainable mining and minerals development.<br>**Unit 6: conservation and management of natural resources.**<br>conservation and management of natural resources-introduction, meaning and objectives of conservation, conservation of renewable and non renewable resources<br>**Unit 7: natural resources policy of india.**<br>Natural resources policy of india, natural forest policy 1952, need for a new national forest policy, national water policy 2002.<br>**Unit 8: integrated environmental and economic accounting: green accounting.**<br>Meaning and need for green accounting<br>**Unit 9: valuing the environment.**<br>Meaning, need for environmental valuation, methods of environmental valuation, difficulties in measuring environmental values. |
| PAPER-IV | Environmental Policies | **Unit 1: climate change and global warming.**<br>Climate change and global warming, green house effect and global warming, acid rain, ozone layer depletion, global level efforts, global environmental externalities, relative damage in underdeveloped and developed countries of climate change, the great green divide.<br>**Unit2: history of grassroot movemsnt.**<br>History of grassroot movements, the chipko movement of india, the environmental movement in UK, the history of environmental movement in America.<br>**Unit 3: international conference on environment.**<br>International conferences on environment, stockhoilm conference on human environment, world commission on environment and development, the rio declaration:the earth summit 1992, convention on biological diversity.<br>**Unit 4: trade and environmental issues.**<br>Trade and environmental issue-introduction, the role of WTO,<br>**Unit 5: environmental pollution.**<br>environmental pollution-introduction, water pollution, air pollution, noise pollution, |

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| | | marine pollution, soil pollution, thermal pollution, nuclear hazards.<br>**Unit 6: environmental victims.**<br>Environmental victims-introduction**,** Chernobyl nuclear accident and holocaust, Bhopal gas tragedy<br>**Unit 7: policy instruments for environmental protection.**<br>policy instruments for environmental protection, policy measures to control environment.<br>**Unit 8: value based environmental education and public awareness.**<br>value based environmental education and public awareness, environmental education, public awareness.<br>**Unit 9: environmental laws in india.**<br>environmental laws in india, objective of environmental laws, the role of ministry of environment and forests, the motor vehicle act 1988, the factories act 1948, the water (prevention and control of pollution) act 1974, the air (prevention and control of pollution) act1981, the environmental (protection)act 1986, the noise pollution (regulation and control) rules 2000, the wildlife(protection) act 1972, forest(conservation() act 1980, hazardous waste management and handling rules 1989, the bio medical waste (management and handling)rules 1998, the recycles plastics manufacture and usage (amendment) rules 2003<br>**Unit 10: environmental hazards and disaster management.**<br>environmental hazards and disaster management, national calamity management act 2000, a resume of disaster management in india, three principles.<br>**Unit 11: national environment policy (2006).**<br>national environment policy (2006), objective of national environment policy (2006), strategy for conservation of environmental resources.<br>**Unit 12: environmental management.**<br>environmental management**,** the principles of environmental management. |
| **FOURTH SEMESTER** | | |
| PAPER-1 | Environment and development | **Unit 1: Environment economics and development.**<br>Environment economics and development-introduction, economic growth and development, scope of environmental economics, environmental segments, organization and structure of the ecosystem, services of the environment, material balance model, environmental utilization space, relationship between environment and the economy, environment and economic system, willingness for environmental improvement.<br>**Unit 2: ecology and economic development-the debate.**<br>ecology and economic development-the debate, introduction.<br>**Unit 3: the interaction between ecology and economic theory**<br>the interaction between ecology and economic theory, an introduction to input-output analysis and its importance in ecological study, the Cumberland-isard/daly i/o model, the ayres-kneese model,<br>**Unit 4: basic theory of environmental economics**<br>basic theory of environmental economics-introduction, market failure and externalities, meaning of market failure, various kinds of externalities, measurement of externalities, solution of externalities, pollution externalities and economic effici, concept of social welfare economics, efficiency and perfect competition, perfect competition and externalities, definition and meaning of pareto efficiency, maximum social welfare and perfect competition.<br>**Unit 5: environmental quality as a public good.**<br>environmental quality as a public good, environmental quality, common property resource, tragedy of commons, air as an environmental quality, water as an environmental quality.<br>**Unit 6: tragedy of commons-an analysis** |

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| | | tragedy of commons-an analysis-introduction, technology for disposal. |
| PAPER-II | Environmental Education | **Unit 1: conservation of resources.**<br>conservation of resources-introduction, preservation and conservation, mans impact on the resources, adverse effect on resources, conservation awareness, conserve our resources, introduction, methods of conservation.<br>**Unit 2: need for and the scope of forest conservation.**<br>need for and the scope of forest conservation-introduction, the benevolent role of forest, deforestation- cause,, effects and issues, forests policies in india, growing awareness of forestry programmes in india, annexure, forest fact file-annexure I, forests institute in india annexure II, forest conservation and culture annexure III<br>**Unit 3: soil degradation and land use.**<br>soil degradation and land use, soil degradation, causes of land degradation, land use, land use conflicts, measure to control land use, urban land use regulations,<br>**Unit 4: air pollution.**<br>Air pollution-introduction, structure of the atmosphere, sources of air pollution, impacts of acid rain, air pollution in india, air quality control, indoor air pollution.<br>**Unit 5: noise pollution.**<br>Noise pollution, noise, measurement of sound, road traffic noise and its control, role of tamil nadu pollution control board on noise pollution, ministry of environment and forests notification, an example of noise pollution in the seas.<br>**Unit 6: nuclear energy and pollution**.<br>nuclear energy and pollution-introduction, scope of nuclear energy, environmental preservation, economic performance, environmental protection, effects of nuclear energy on the environment, case study 1-chernobyl, Ukraine. Case study 2-three mile island, pennsylva, environmental benefits of nuclear power generation. |
| PAPER-III | Environmental Protection Strategies | **Unit 1: polulation and urbanization its impact on environment.**<br>polulation and urbanization its impact on environment, population factor, increase in population in developed and developing countries, the theory of demographic transition, criticism of the demographic transition theory, environmental problems and urbanization, effects of urbanization.<br>**Unit 2: issues and concepts in environmental protection.**<br>issues and concepts in environmental protection, the poverty and underdevelopment of the third world, cost benefit analysis, costs and benefits in controlling pollution, merits and demerits of costs benefits analysis, the environmental costs of economic growth, beyond the limits of growth, introduction, environmental issues in different economies.<br>**Unit 3: Policies and strategies on environment protection.**<br>Policies and strategies on environment protection- introduction, pollution as an economic problem, optimum level of pollution control, basic approach to the problems of pollution control, allocation of property rights, market-based environmental laws in practice, distributive effects of environmental policy.<br>**Unit 4: indias environmental policy and performance**.<br>indias environmental policy and performance-introduction, state of the environment-pre-independence(during the british rule), the need for a general legislation-why a separate environment act?, national environment awareness campaign. |
| PAPER-IV | Env. Planning for the Future | **Unit 1: Environmental planning**.<br>Environmental planning<br>**Unit 2: environmentalism as a social movement**.<br>environmentalism as a social movement<br>**Unit 3: organic food**.<br>organic food<br>**Unit 4: human population**.<br>human population<br>**Unit 5: International environmental policy (Stockholm to Doha).** |

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| | | International environmental policy (Stockholm to Doha),-introduction, rio declaration.<br>**Unit 6: global warming and green house effect**<br>global warming and green house effect-introduction, results from global warming, climate change convention, contribution of indias towards warming,<br>**Unit 7: environmental planning and management**.<br>Environmental planning and management, introduction, poverty and environment, wasteland management.<br>**Unit 8: environmental impact analysis/assessment**.<br>environmental impact analysis/assessment, impact of agriculture on environment, impact of irrigation on environment, impact of industrial estates on environment, impact of transport and power on environment. |
| **FIFTH SEMESTER** | | |
| PAPER-1 | Man and Environment | **Unit 1: environmental crisis**.<br>environmental crisis, history of pollution, definition, scope, and importance of study on environment, global scenario on environmental crisis, environmental education programme, environmental education-a multidisciplinary approach.<br>**Unit2: ecology and environment**.<br>ecology and environment, ecolgy, environment, ecosystem, structural components, ecological pyramids, energy flow in ecosystems, cycling of matter between the ecosystem and abiotic environment, gaseous cycle, the sedimentary cycle, ecological succession.<br>**Unit 3: environmental pollution**.<br>environmental pollution, segments of environment, environmental pollutants.<br>**Unit 4: population explosion**.<br>population explosion.<br>**Unit 5: environment and human health**.<br>environment and human health.<br>**Unit 6: environment and human rights**.<br>environment and human rights.<br>**Unit 7: environment and value eduction**.<br>environment and value eduction.<br>**Unit 8: environment and health of women and children**.<br>environment and health of women and children. |
| PAPER-II | Air Pollution Control | **Unit 1: air pollution and control**<br>air pollution and control, history of pollution, definition of air pollution, classification of air pollutants.<br>**Unit 2: concentration expression**.<br>concentration expression, meteorology and air pollution.<br>**Unit 3: effects of ambient air pollution**.<br>effects of ambient air pollution<br>**Unit 4: air pollution and biosphere**.<br>air pollution and biosphere, global effects of air pollution.<br>**Unit 5: air quality monitoring**.<br>air quality monitoring<br>**Unit 6: measures for air pollution control**.<br>measures for air pollution control |
| PAPER-III | Water Pollution Control | **Unit 1: what is water pollution**<br>what is water pollution<br>**Unit 2: sources of water pollution.**<br>sources of water pollution<br>**Unit 3: the pollutants of water.**<br>the pollutants of water |

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| | | **Unit 4: biological contamination of water.**<br>biological contamination of water<br>**Unit 5: water quality parameters and monitoring techniques.**<br>water quality parameters and monitoring techniques<br>**Unit 6: water quality standards.**<br>water quality standards<br>**Unit 7: self-purification of river water.**<br>self-purification of river water<br>**Unit 8: deoxygenaion of the stream.**<br>deoxygenaion of the stream<br>**Unit 9: ground water pollution.**<br>ground water pollution<br>**Unit 10: reuse of treated wastewater.**<br>reuse of treated wastewater<br>**Unit 11: strategies for water pollution control.**<br>strategies for water pollution control<br>**Unit 12: purification of water.**<br>purification of water**.**<br>**Unit 13: rain water harvesting.**<br>rain water harvesting<br>**Unit 14: watershed management**.<br>watershed management |
| PAPER-IV | Diverse Pollution Control | **Unit 1: pollution.**<br>pollution**.**<br>**Unit 2: pollution: what, where and why?**<br>pollution: what, where and why?<br>**Unit 3: soil pollution and its control.**<br>soil pollution and its control, land and soil degradation, soil pollution due to solid waste, soil waste management.<br>**Unit 4: noise pollution and its control.**<br>noise pollution and its control, introduction, sound power, sound intensity and measurement of sound intensity, combining noise levels, noise control, control of noise pollution.<br>**Unit 5: radioactive pollution and control.**<br>radioactive pollution and control, discovery of radioactivity, radioactive emanations, radioactive disintegration or decay, radiation and radioisotopes, measurement of radiation units, radioactive pollutants, hazards of radiation, enrichment of radioactive substances, pathways of radioactive materials into human systems.<br>**Unit 6: thermal pollution and control**.<br>thermal pollution and control, introduction, effects of thermal pollution, control of thermal pollution. |
| **SIXTH SEMESTER** | | |
| PAPER-1 | Ecological Res. Conservation | **Unit 1: biodiversity.**<br>Biodiversity, introduction, levels of biodiversity, global diversity, preserving biodiversity, measurement of biodiversity, biodiversity in tropical areas, threats to biodiversity, biodiversity conservation, conservation of biodiversity in india.<br>**Unit 2: natural resource**<br>Natural resources, introduction, classification of natural resources, different resources.<br>**Unit 3: environmental protection law and regulations**.<br>environmental protection law and regulations, environmental laws, environmental protection under Indian constitution, environmental legislation in india, the water (prevention and control of pollution) act 1974, the air (prevention and control of pollution) act 1981, the environment protection act, the forest conservation act 1980, |

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| | | the wildlife protection act 1972, the public liability insurance act 1991, the national environmental tribunal act,1995, the other acts and rules concerning the environment. |
| PAPER-II | Disaster Management | **Unit 1: what is a disaster?**<br>**Unit 2: natural disasters**<br>**Unit 3: natural hazards**<br>**Unit 4: natural disaster by death toll**<br>**Unit 5: earthquakes in the pasts.**<br>**Unit 6: volcano eruptions.**<br>**Unit 7: lists of floods.**<br>**Unit 8: cyclone**<br>**Unit 9: tropical cyclones.**<br>**Unit 10: drought.**<br>**Unit 11: Supercell**<br>**Unit 12: Wildfires**<br>**Unit 13: Epidimics**<br>**Unit 14: Famines**<br>**Unit 15: Gamma-ray burst**<br>**Unit 16: Impact event**<br>**Unit 17: Solar flare**<br>**Unit 18: Supernova**<br>**Unit 19: Hypernova**<br>**Unit 20: Disaster management**<br>**Unit 21: Hurricane preparedness**<br>**Unit 23: Business continuity planning**<br>**Unit 23: Existential risks** |
| PAPER-III | Research Methodology | |
| PAPER-IV | DESSERTATION | |