



ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY

GE3451-ENVIRONMENTAL SCIENCE AND ENGINEERING QUESTION BANK

UNIT I ENVIRONMENT AND BIODIVERSITY

Definition, scope and importance of environment – need for public awareness. Eco-system and Energy flow– ecological succession. Types of biodiversity: genetic, species and ecosystem diversity– values of biodiversity, India as a mega-diversity nation – hot-spots of biodiversity – threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts – endangered and endemic species of India – conservation of biodiversity: In-situ and ex-situ.

PART-A

1. What are food chains? (Apr-15) (Nov-15)	CO1	K1
2. Define Eco-System with an example?	CO1	K1
3. Give any to examples of physical hazard? (May- 16)	CO1	K1
4. What is Ecological Succession? Mention its types.	CO1	K1
5. Discuss about the prime characteristics of (May -16)	CO1	K1
i. Forest Ecosystem	CO1	K1
ii. Desert Ecosystem	CO1	K1
iii. Grassland Ecosystem	CO1	K1
iv. Aquatic Ecosystem	CO1	K1
6. Differentiate species and genera. (or) Define genetic diversity. (Apr-17)	CO1	K1
7. Differentiate between biodiversity and ecosystem biodiversity.	CO1	K1
8. What are hotspots of biodiversity? (Nov-15)	CO1	K1
9. Justify India to be a great spot of biodiversity.	CO1	K1
10. Bring out the threats towards biodiversity. How poaching affects biodiversity? (Nov-15)	CO1	K1
11. What are the aesthetic values of biodiversity?	CO1	K1
12. Explain the necessity to conserve biodiversity.	CO1	K1
13. Discuss the water cycle. (Apr-17)	CO1	K1
14. Bring few methods to conserve biodiversity.	CO1	K1
15. Bring out the classification of aquatic ecosystem.	CO1	K1
16. What is ecosystem diversity?	CO1	K1
17. What are biodiversity and its significance? (Apr-15)	CO1	K1
18. What is threatened species?	CO1	K1
19. Define environment. Mention its components.	CO1	K1
20. Define environmental science & environmental education.	CO1	K1
21. Give the components & functions of eco system.	CO1	K1
22. Define energy flow and nutrient flow.	CO1	K1

23. Define consumers, producers and decomposers	CO1	K1
24. Define genetic and species diversity	CO1	K1
25. Define endangered and endemic species with examples.	CO1	K1

PART-B		
1. Explain the components, and functions of a Forest ecosystem.(CO1,K1	CO1	K1
2. Explain the structure and functional features of Aquatic ecosystem.	CO1	K2
3. Write a note on endangered and endemic species of India.	CO1	K4
4. Discuss the value of biodiversity.	CO1	K3
5. Explain Carbon, Oxygen and Nitrogen cycles.	CO1	K5
6. What are the threats faced by biodiversity. What are the solutions for the threats?	CO1	K5
7. Explain In-situ and Ex-situ conservation of biodiversity. (or) What are the measures	CO1	K4
recommended foconservation of biodiversity?	CO1	K4
8. Write the components of environment. Mention their functions.	CO1	K4
9. Define eco systems. Mention their structure, components and functions.	CO1	K4
10. Discuss the important features of grass land /forest /marine /desert/	CO1	K4

UNIT II ENVIRONMENTAL POLLUTION

Causes, Effects and Preventive measures of Water, Soil, Air and Noise PollutionsSolid, Hazardous and E-Waste management. Case studies on Occupational Health and Safety Management system (OHASMS). Environmental protection, Environmental protection acts ..

PART-A		
1. Define Pollution.	CO2	K1
2. What is PAN? Give its detrimental effect. (May-16) (may-17)	CO2	K1
3. What are the sources and effects of air pollutants?	CO2	K1
4. How will you control air pollution?	CO2	K1
5. Define photochemical smog.	CO2	K1
6. Give the major water pollutants with example.	CO2	K1
7. What is meant by point and nonpoint sources?	CO2	K1
8. What are types of acid rain? (Apr-15) (Nov-15)	CO2	K1
9. Define BOD and COD.	CO2	K1
10. What are the sources effects of marine pollution?	CO2	K1

11. Define thermal pollution. (May-16)	CO2	K1
12. What are the impact of thermal pollution on aquatic ecoosystem? (nov-15)	CO2	K1
13. Give the sources of radio activity.	CO2	K1
14. Define soil pollution.	CO2	K1
15. What is the role of individual in pollution prevention? (nov-15)	CO2	K1
16. What is Municipal Solid Wastes (MSW)	CO2	K1
17. What is composting.	CO2	K1
18. What is an incinerator?	CO2	K1
19. What are aerosols? Give examples.	CO2	K1
20. Explain aerobic and anaerobic oxidation.	CO2	K1
21. What is meant by automobile pollution?	CO2	K1
22. Define marine pollution. (Nov-15) (Apr-17)	CO2	K1
23. Define noise pollution (Apr-15)	CO2	K1
24. Mention the effects of nuclear pollution (may-17)	CO2	K1
25. Mention the methods of disposal of radioactive wastages	CO2	K1

PART-B

1. Mention the sources, effects and control method of air pollution of various air pollutant.	CO2	K3
2. Explain the method of sewage water treatment.	CO2	K4
3. Explain the causes, effects & control measures of Water pollution.	CO2	K4
4. What are the causes of soil erosion and methods of preventing it?	CO2	K5
5. What are the measures to be taken to prevent soil pollution?	CO2	K3
6. What are the sources, effects & control measures of Marine pollution?	CO2	K3
7. Explain the various types of Radio-active radiations.	CO2	K5
Write notes on disposal of radioactive wastes.	CO2	K4
8. What are the effects of improper municipal solid waste management? State the measures recommended for proper management of the solid waste.	CO2	K5
9. Define soil pollution. Discuss the causes, effect and control measures of it.	CO2	K4
10. Define noise pollution. Discuss the causes, effect and control measures of noise pollution.	CO2	K5

UNIT –III NATURAL RESOURCES

PART-A

UNIT III RENEWABLE SOURCES OF ENERGY

Energy management and conservation, New Energy Sources: Need of new sources. Different types new energy sources. Applications of- Hydrogen energy, Ocean energy resources, Tidal energy conversion. Concept, origin and power plants of geothermal energy

1. What are the types of natural resources?	CO3	K1
2. Define deforestation and causes of deforestation.	CO3	K1
3. Mention some consequences of deforestation.	CO3	K1
4. Define mining and its types.	CO3	K1
5. What are the steps involved in mining. (may-16)	CO3	K1
6. What are the effects of dams on forest?	CO3	K1
7. Define the steps in hydrological cycle.	CO3	K1
8. What are the reasons for land degradation? (may-16)	CO3	K1
9. What are the consequences of over utilization of ground water?	CO3	K1
10. How minerals are formed and what are the classifications of mineral resources?	CO3	K1
11. How minerals are exploited?	CO3	K1
12. What are the impacts of extracting and using minerals?	CO3	K1
13. Mention the problems in using fertilizers and pesticides.	CO3	K1
14. What is salinity? And what are the problems faced during salinity. (apr-17)	CO3	K1
15. Define OTE.	CO3	K1
16. What is biomass energy?	CO3	K1
17. Differentiate coal power and nuclear power.	CO3	K1
18. Define soil erosion and its types.	CO3	K1
19. Define desertification.	CO3	K1
20. What is meant by bioconversion of pollutants?	CO3	K1
PART – B	CO3	K4
1. Explain in detail about forest resources, its functionality and benefits.	CO3	K5
2. What is deforestation? What are the causes of deforestation? And explain their impact on the environment.	CO3	K4
3. (i) Brief about timber extraction and its consequences. (ii) What is mining explain its types.	CO3	K4

4. (i) What are dams and explain their effects on forest and tribal people. Explain with any one case study. (ii) Mention the benefits and problems in constructing a dam.	CO3	K5
5. (i) Discuss in detail about water Resources. (ii) Discuss about desertification.	CO3	K4
	CO3	K5
6. Briefly explain in detail about mineral resources.	CO3	K5
7. (i) Explain in detail about Food resources. (ii) What are the adverse effects of agricultural practices?	CO3	K4
8. Describe in detail about Renewable and nonrenewable energy resources.	CO3	K5

UNIT IV SUSTAINABILITY AND MANAGEMENT 6

Development, GDP, Sustainability- concept, needs and challenges-economic, social and aspects of sustainability-from unsustainability to sustainability-millennium development goals, and protocols -Sustainable Development Goals-targets, indicators and intervention areas Climate change-Global,Regional and local environmental issues and possible solutions-case studies. Concept of CarbonCredit, Carbon Footprint. Environmental management in industry-A case study.

PART – A

1. Define sustainable development (may-16)	CO4	K1
2. What are the causes of urbanization?	CO4	K1
3. What are the measures of water conservation?	CO4	K1
4. List out the need of rain water harvesting. (nov-15)	CO4	K1
5. What are the factors affect watershed? (nov-15)	CO4	K1
6. What are the roles of NGO?	CO4	K1
7. Define environmental ethics.	CO4	K1
8. Define consumerisation. (nov-15)	CO4	K1
9. List out the principles of green chemistry.	CO4	K1
10. Define nuclear holocaust.	CO4	K1
11. What is the need of waste land reclamation?	CO4	K1
12. How is cyclone formed.(apr-17)	CO4	K1
13. What is the environment protection act?	CO4	K1
14. Define air prevention and control of pollution act.	CO4	K1
15. state any two biomedical waste handling rules.(may-16)	CO4	K1
16. Define the objectives of wildlife act and forest act.	CO4	K1
17. when does rehabilitation arise? Mention any one problem to government during rehabilitation.(apr-17)	CO4	K1
18. What are the issues involved in enforcement of environmental legislation.	CO4	K1

19. Briefly explain the role of central and state pollution control boards.	CO4	K1
20. Define disaster management.	CO4	K1
PART – B		
1. State the provisions in Environment protection act, Air Act and water act.	CO4	K3
2. (i) Explain in detail about sustainable Development	CO4	K4
. (ii) Discuss about bio medical waste	CO4	K5
3. (i) Discuss in detail about water Conservation.	CO4	K4
(ii) Explain in detail the concept of Green chemistry	CO4	K3
4. Describe in detail the role of NGO.	CO4	K4
5. What is meant by environmental ethics, mention the functions of environment and the problems and issues.	CO4	K4
6. Explain with any case study about the nuclear Accidents and Holocaust	CO4	K5
7. (i) Describe about Waste land development and the need for it.	CO4	K4
(ii) Describe the objectives of consumerism.		
8. Discuss in detail about Water Act and Wildlife, Forest Act.	CO4	K4
9. Explain the concept of Disaster Management with an example case study.	CO4	K3
10. (i) What are the issues involved in Environmental legislation	CO4	K5
(ii) How public awareness is done to conserve the environment		

UNIT V SUSTAINABILITY PRACTICES 6

Zero waste and R concept, Circular economy, ISO 14000 Series, Material Life cycle assessment, Environmental Impact Assessment. Sustainable habitat: Green buildings, Green materials, Energy efficiency, Sustainable transports. Sustainable energy: Non-conventional Sources, Energy Cycles carbon cycle, emission and sequestration, Green Engineering: Sustainable urbanization- Socioeconomical and technological change

PART – A

1. Write short notes on population dynamics.	CO5	K1
2. What are the factors affecting population size?	CO5	K1
3. What is meant by population stabilization.	CO5	K1
4. Define the term population explosion and the reason behind it. (may-16)	CO5	K1
5. What kinds of problems are created due to Urbanisation?	CO5	K1
6. Define population stabilization ratio.	CO5	K1
7. What are the factors influencing human health.	CO5	K1
8. Define NIMBY syndrome.	CO5	K1
9. Define human rights and the universal declaration of rights.	CO5	K1
10. What is the meant by Indian constitution.	CO5	K1

11. What are the objectives of family welfare programme. (may-16)	CO5	K1
12. What is the role of primary health care against AIDS?	CO5	K1
13. What do you mean by remote sensing?	CO5	K1
14. What is doubling time, total fertility rates?	CO5	K1
15. Define Zero Population growth.	CO5	K1
16. Define EIA.	CO5	K1
17. What is meant by value education? What is the need for it?	CO5	K1
18. What is GIS?	CO5	K1
19. Define (i) Toxins (ii) Carcinogens (iii) Tetrogenic (iv) Neurotoxins.	CO5	K1
20. State how environment & human health are related?	CO5	K1

PART – B

1. (i) Explain the population characteristics & variations among nations (ii) What is meant by population explosion? Discuss the Indian Scenario.	CO5	K4
	CO5	K4
2. What is meant by population stabilization? Discuss the family welfare and family planning in Indian context.	CO5	K5
3. Discuss the influence of environmental parameters and pollution on human health.	CO5	K4
4. (i) What is Universal declaration of Human rights? What is its importance achieving the goals equity, justice & sustainability.	CO5	K3
(ii) Discuss the salient features of Draft declaration of Human Rights on environment.	CO5	K5
5. What are the objectives & elements of Value-education? How can the same be achieved?	CO5	K6
	CO5	K5
6. (i) Briefly discuss HIV/AIDS, mode of its spread and its effect on environment.	CO5	K5
(ii) Discuss various issues & measures for Women & Child Welfare at International & National level.	CO5	K5
7. What is the role of NMIS, ENVIS & GIS in dissemination of environmental information and environmental management?	CO5	K4
8. Explain the role of Information Technology in environment & Human health with a case study.	CO5	K4
9. (i) Discuss the environmental and social impacts of growing population.	CO5	K3
(ii) Write briefly on the effect of increasing affluence on environment.	CO5	K5
10. (i) Write briefly on implementation of family planning programme	CO5	K4

