



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

Department of Electrical and Electronics Engineering

TUTORIAL QUESTION BANK

Course Name	:	Environmental Studies
Course Code	:	A60009
Class	:	III B.Tech II Semester
Branch	:	Electrical and Electronics Engineering
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Course Coordinator	:	Mr. V.S. K Prasad Rao, Associate Professor
Course Faculty	:	Mr. V.S. K Prasad Rao, Associate Professor

OBJECTIVE:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

UNIT – I			
INTRODUCTION TO MEASURING INSTRUMENTS			
PART – A (SHORT ANSWER QUESTIONS)			
S. No	QUESTION	Blooms Taxonomy Level	Course Outcomes
1	Define ecology and ecosystem.	Remember	1
2	Differentiate between food chain and food web.	Understand	1
3	Briefly explain the importance of ecological pyramids	Remember	1
4	Define biogeochemical cycles? Explain their importance.	Understand	1
5	List the factors make a desert ecosystem	Remember	1
6	Briefly discuss about grassland ecosystem	Understand	1
7	Explain few important characteristics of a forest ecosystem.	Remember	1
8	Explain why there are only 4 to 5 tropic levels in any ecosystem	Understand	1
9	Briefly discuss an aquatic ecosystem.	Remember	1
10	Define biomagnifications	Understand	1
11	Define bioaccumulation	Remember	1
12	Define carrying capacity?	Understand	1
PART – B (LONG ANSWER QUESTIONS)			
1	Explain energy flow pattern in different types of ecosystem	Remember	1
2	Discuss the major characteristics features of a river ecosystem	Understand	1

3	List the main components of ecosystem and briefly describe the functions of each.	Remember	1
4	Explain the role of producers, consumers and decomposers in an ecosystem with practical example.	Understand	1
5	What would happen to an ecosystem if all its decomposer and	Remember	1
6	List the food chain and food web? give example and discuss	Understand	1
7	List the biogeochemical cycles? Explain nitrogen cycle with	Remember	1
8	Define the ecological pyramids? Explain why some of these	Understand	1
9	Explain energy flow of the ecosystem.	Remember	1
10	Name all the cycles that constitute the proper functioning of	Understand	1
11	Discuss primary production and secondary production.	Remember	1
12	Explain ecological pyramids.	Understand	1
13	Discuss pyramid of energy.	Remember	1
14	Differentiate between grazing food chain detritus food chain.	Understand	1
15	List the different tropic levels of ecosystem?	Remember	1

PART- C(ANALYTICAL AND CRITICAL THINKING)

1	List the different development activities, including construction of dams, affect the various ecosystems and what action need to be taken to conserve them.	Remember	1
2	Explain the impacts of pesticide and other agro chemicals on any ecosystem you have visited.	Understand	1
3	Explain with examples the links between the activities of man which are hazardous to human health and ecosystem.	Remember	1
4	Why ecosystem is getting degraded and what are the steps have to be taken by public?	Understand	1
5	If every organism must eat another organism for survival, where does the food chain start? Recall.	Understand	1
6	What is the role of an individual to conserve the environment?	Understand	1
7	Mention type of cycles we have in an ecosystem. Explain how water circulates on earth.	Understand	1
8	What is the scope and importance of environment?	Understand	1
9	Explain why there are only 4 to 5 tropic levels in any ecosystem.	Understand	1
10	Write a short note on the need for public awareness on environment in today's scenario.	Understand	1

UNIT-II

PART – A (SHORT ANSWER QUESTIONS)

1	Discuss some of the water resources problems in India.	Remember	2,3
2	Discuss the methods of flood control.	Understand	2,3
3	Define desertification?	Remember	2,3
4	Define aquifer?	Understand	2,3
5	List the environmental effects of using of mineral resources?	Understand	2,3
6	define mineral? What is its use?	Remember	2,3
7	Name the non renewable resources?	Understand	2,3
8	Define water logging?	Remember	2,3
9	Define soil erosion?	Remember	2,3
10	List the effects of soil pollution?	Understand	2,3
11	Define green fuels?	Understand	2,3

12	Outline the role of geo thermal energy in India?	Remember	2,3
13	List the different type's energies which can be derived from	Understand	2,3
14	Define solar cells.	Remember	2,3
15	Define pesticides? Mention it types.		2,3
PART – B (LONG ANSWER QUESTIONS)			
1	List the Natural resources and write the classification of	Remember	2,3
2	Explain the Big dams - Benefits and problems.	Understand	2,3
3	List the Mineral Resources, uses and exploitation?	Remember	2,3
4	List the alternate energy sources? Explain their present status, merits and demerits.	Understand	2,3
5	Explain the environmental impacts of (i) Fertilizer – Pesticides (ii). Over grazing.	Remember	2,3
6	Define mining. Explain various environmental impacts of mineral extraction.	Understand	2,3
7	List the importance of forest resources for economic and ecological wealth of country?	Understand	2,3
8	Discuss about the soil texture, structure and its composition.	Remember	2,3
9	Write a short note on wind energy; also discuss its advantages and limitations.	Understand	2,3
10	List the different types of energies which can be derived from the ocean? Explain briefly along with their advantages and limitations.	Understand	2,3
12	Discuss the problems of over exploitation of ground water.	Remember	2,3
13	Explain the causes for floods.	Remember	2,3
PART - C (ANALYTICAL AND CRITICAL THINKING)			
1	Prepare a detailed report on the management of water and waste water in your town/city?	Understand	2,3
2	Discuss with the help of a case study, how big dams have affected forests and tribal?	Remember	2,3
3	What changes would you incorporate in your life-style in a move towards a sustainable use of our resources?	Understand	2,3
4	What you can do to conserve water? Explain how rain water can be harvested.	Understand	2,3
5	Water is a unique resource. Comment on this statement.	Understand	2,3
6	What are the environmental and social impacts of mining?	Understand	2,3
7	What are the major anthropogenic causes of droughts and floods? Give its remedial measures.	Understand	2,3
8	What is wind energy? Enumerate advantages and disadvantages associated with wind power.	Understand	2,3
9	Discuss some of the water resources problems in India.	Understand	2,3
UNIT – III			
BIODIVERSITY AND BIOTIC RESOURCES			
PART – A (SHORT ANSWER QUESTIONS)			

1	Define biodiversity. How biodiversity is measured?	Remember	2
2	What are the uses of biodiversity?	Remember	2
3	Define biodiversity hotspot. Where are biodiversity hotspots located?	Remember	2
4	What are the main causes of loss of biological diversity nowadays?	Understand	2
5	Summarize India as a mega diversity nation.	Remember	2
6	Differentiate between genetic and species diversity.	Understand	2
7	List the indirect values of biodiversity.	Remember	2
8	What is the value of biodiversity?	Remember	2
9	Define the term genetic banks.	Remember	2
10	What is habitat fragmentation?	Remember	2
11	Describe how can human activities have an effect on biodiversity.	Understand	2
12	Define national park. Name few such parks in India.	Remember	2
13	Outline in situ and ex situ conservation of biodiversity.	Remember	2
14	What does NBPGR AND NBAGR stand for?	Remember	2
15	List the national wildlife sanctuaries.	Remember	2
16	List the major causes of man-wild life conflict.	Understand	2
17	Enumerate major threats to biodiversity.	Understand	2
18	Discuss how poaching affects the environment.	Understand	2
19	Why habitat loss is a threat to biodiversity?	Understand	2
20	What is a biosphere reserve? List few biosphere reserves in India.	Remember	2
PART – B (LONG ANSWER QUESTIONS)			
1	Discuss the causes of man-wild life conflicts. Suggest suitable wild life conservation practices.	Remember	2
2	Define biodiversity? Explain different types of biodiversity	Understand	2
3	Explain in-situ and ex-situ conservation of biodiversity	Remember	2
4	Summarize consumptive use value, productive use value, social value and optional value of biodiversity?	Remember	2
5	How the study of biodiversity is beneficial to human life.	Remember	2
6	Explain the threats to biodiversity?	Understand	2
7	Define biodiversity; explain genetic biodiversity, species diversity and ecosystem diversity?	Remember	2
8	Discuss the status of India as a mega diversity nation of biodiversity.	Understand	2
9	List the different services that are contributed in various ways by biodiversity?	Remember	2
10	Explain endangered species of India?	Understand	2
11	Enumerate the biogeographical classification of India.	Remember	2
12	Explain hot spots of biodiversity? Mention the three hot spots in	Understand	2
13	List the major causes of man-wild life conflict?	Remember	2
14	Explain poaching of wild life	Remember	2
15	Write shorts on national biodiversity ACT	Understand	2
16	What are threats to biodiversity	Remember	2
GROUP- C ANALYTICAL AND CRITICAL THINKING			
1	What are the three categories in to which biodiversity can be separated?	Understand	2

2	List different developmental activities, including construction of dams, affect the biodiversity and action need to be taken to conserve them.	Understand	2
3	Why is biodiversity valuable and how can be the value of biodiversity estimated?	Understand	2
4	India is one of the world's richest countries in terms of its vast array of biological diversity. Support the statement with three facts.	Understand	2
5	What are the basic issues in protecting wild flora and fauna?	Understand	2



6	Describe the measures taken by India to save our biodiversity.	Understand	2
7	Explain how ex-situ conservation is practised. Write its advantages and disadvantages.	Understand	2
8	Describe how effective are different types of protected areas at conserving biodiversity and providing ecosystem services.	Understand	2
9	a)Name the types of plants for which gene sanctuaries in India exist. b)Name the animals for whose protection and conservation specific	Understand	2
10	Explain how in-situ conservation is practised. Write its advantages and disadvantages.	Understand	2

UNIT – IV

ENVIRONMENTAL POLLUTION AND CONTROL TECHNOLOGIES:

PART – A (SHORT ANSWER QUESTIONS)

1	Define environmental pollution.	Remember	4
2	Define air pollution?	Remember	4
3	Mention two important controlling devices of air pollution used in industries.	Remember	4
4	Mention the major sources of primary air pollutants.	Understand	4
5	Define water pollution.	Remember	4
6	List the various types of water pollution?	Understand	4
7	Mention the main treatment methods meant for industrial effluents.	Remember	6
8	Differentiate between aerobic oxidation and anaerobic	Remember	6
9	Define eutrophication.	Remember	6
10	Define Bod and Cod	Understand	6
11	Differentiate between blue baby syndrome and itai-itai disease	Remember	6
12	Define soil pollution.	Understand	6
13	Underline the monitoring of soil pollution made?	Remember	6
14	Define noise pollution.	Understand	6

PART – B (LONG ANSWER QUESTIONS)

1	Define environmental pollution and explain their types and effects.	Understand	6
2	Define air pollution and describe the technologies for the control of air pollution.	Remember	6
3	Explain primary and secondary sources of air pollution?	Understand	6

4	List the effects of air pollution on plants, animals and human beings	Remember	6
5	Explain automobile pollution and industrial pollution.	Understand	6
6	List the main stages of treatment of domestic sewage?	Remember	6
7	List the chemical treatments for industrial effluents?	Remember	6
8	Mention some of the water borne diseases and the name of the pathogenic organisms involved in it.	Remember	6
9	Enumerate the various effects of soil pollution.	Understand	6
10	List the physical, physiological and psychological effects of noise?	Remember	6
11	Describe National ambient air quality standards.	Remember	6
12	Define water pollution and explain point and non point sources of water pollution.	Understand	6
GROUP- C ANALYTICAL AND CRITICAL THINKING			
1	Explain sewage water treatment plants, effluent water treatment plants and common effluent treatment plants.	Remember	4
2	List the effects of water pollution and enumerate drinking water quality standards	Understand	4
3	Explain the methods for the control of water pollution.	Remember	5
4	List out the Sewage treatment plants, effluent treatment plants and common effluent treatment plants in your vicinity.	Understand	5
5	Explain the problems encountered in the disposal of solid waste from various sources?	Remember	6
6	Explain the e-waste can be effectively managed.	Understand	6
UNIT – V			
ENVIRONMENTAL POLICIES, LEGISLATIONS, RULES AND REGULATIONS			
GROUP - A (SHORT ANSWER QUESTIONS)			
1	List the objectives of Air pollution act.	Remember	7
2	Explain the necessity of wild life protection act.	Understand	7
3	Explain the necessity of various environmental legislations.	Remember	7
4	Mention the objectives of environmental protection act.	Understand	7
5	Discribe water cess and water pollution as defined by water pollution cess act, 1974.	Remember	7
6	List the bio-medical wastes? What are the rules to manage and handle them?	Understand	7
7	Name the governmental organization/deportment responsible for the protection of the environment.	Remember	7
8	Name the role assigned to central pollution and state pollution control board under the water pollution and prevention act.	Understand	7
9	Define environmental impact assessment?	Remember	7

10	Define Environmental Impact Assessment and Environmental Management Plan	Understand	7
11	Explain Life Cycle Assessment(LCA).	Understand	7
12	Define Ecological Foot Print.	Remember	7
13	Enumerate the various effects of Urban Sprawl.	Remember	7
14	Discuss low carbon life style.	Remember	7
GROUP - B (LONG ANSWER QUESTIONS)			
1	List the major provisions in Forest Conservation Act 1980	Remember	7
2	Discuss the salient features of Wild life protection Act	Understand	7
3	List the major municipal solid waste management and handling rules	Remember	7
4	Define biomedical wastes? What are the rules to manage and handle them	Understand	7
5	Define hazardous wastes? Discuss the rules to manage and handle them.	Remember	7
6	Discuss the various types of impacts caused by the developmental activities with suitable examples.	Understand	7
7	Explain the methodology for EIA	Remember	7
8	Describe the impact of dams on socio-economic attribute.	Remember	7
9	Explain the concept of sustainable development.	Understand	7
10	Explain the necessity of environmental education.	Remember	7
11	Explain the concept of green building and Clean development mechanism(CDM)	Understand	7
12	Explain environmental management plan(EMP), remote sensing and GIS methods.	Remember	7
PART – C (ANALYTICAL QUESTIONS)			
1	Why do we refer environment protection act 1986 as an umbrella act? Discuss the role of various governmental agencies in environmental	Understand	7
2.	How do you define the pollution as per water act, 1974? Write the salient features of this act.	Remember	7
3	Explain the concept of green building. How will green building impact the environment overall.	Understand	7
4	What are the rules and regulations that guide waste management in	Understand	7
5	Why is sustainable development so often associated with protecting the environment?	Understand	7
6	Explain how does wild life protection act, 1972 deal with human-animal conflict? Mention the major threats being faced by the wild life	Understand	7
7	What is meant by a basic environmental assessment? Describe the key steps of this process.	Understand	7
8	Why are developing countries experiencing rapid population growth while developed countries are growing more slowly?	Understand	7
9	What are the functions of central board and state board under the air	Understand	7
10	“Environmental education can play an important role in environmental protection”. Explain it.	Understand	7