



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad -500 043

MECHANICAL ENGINEERING

TUTORIAL QUESTION BANK

Course Name	:	ENVIRONMENTAL STUDIES
Course Code	:	A30009
Class	:	II B. Tech I Semester
Branch	:	MECH
Year	:	2016 – 2017
Course Coordinator	:	Mr. Praveen, Assistant Professor.
Course Faculty	:	Mrs. M. Malathi, Assistant Professor.

OBJECTIVES:

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.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

S No	QUESTION	Blooms taxonomy level	Course Outcomes
UNIT – I ECOSYSTEM			
Part - A (Short Answer Questions)			
1	Define ecology and ecosystem.	Remember	C
2	Differentiate between food chain and food web.	Understand	A
3	Briefly explain the importance of ecological pyramids	Remember	B
4	Define biogeochemical cycles? Explain their importance.	Understand	C
5	List the factors make a desert ecosystem	Remember	B
6	Briefly discuss about grassland ecosystem	Understand	C
7	Explain few important characteristics of a forest ecosystem.	Remember	D
8	Explain why there are only 4 to 5 tropic levels in any ecosystem	Understand	C
9	Briefly discuss an aquatic ecosystem.	Remember	B
10	Define biomagnifications	Understand	C
11	Define bioaccumulation	Remember	A
12	Define carrying capacity?	Understand	C
13	Define decomposers?	Understand	C
14	Define photosynthesis process.	Remember	D
15	List the types of grasslands in India and two animal species found in this grass land .	Understand	C

Part - B (Long Answer Questions)			
1	Explain energy flow pattern in different types of ecosystem	Remember	D
2	Discuss the major characteristics features of a river ecosystem different from lake ecosystem	Understand	C
3	List the main components of ecosystem and briefly describe the functions of each.	Remember	A
4	Explain the role of producers, consumers and decomposers in an ecosystem with practical example.	Understand	A
5	What would happen to an ecosystem if all its decomposer and detritus feeder were eliminate.	Remember	A
6	List the food chain and food web? Give example and discuss their significance.	Understand	A
7	List the biogeochemical cycles? Explain nitrogen cycle with help of a diagram.	Remember	C
8	Define the ecological pyramids? Explain why some of these pyramids are upright while others are inverted in different ecosystem.	Understand	D
9	Explain energy flow of the ecosystem.	Remember	D
10	Name all the cycles that constitute the proper functioning of an ecosystem.	Understand	D
11	Discuss primary production and secondary production.	Remember	B
12	Explain ecological pyramids.	Understand	A
13	Discuss pyramid of energy.	Remember	B
14	Differentiate between grazing food chain detritus food chain.	Understand	C
15	List the different tropic levels of ecosystem?	Remember	B
Part - C (Problem Solving and Critical Thinking Questions)			
1	List the different development activities, including construction of dams; affect the various ecosystems and what action needs to be taken to conserve them.	Remember	C
2	Explain the impacts of pesticide and other agro chemicals on any ecosystem you have visited.	Understand	B
3	Explain with examples the links between the activities of man which are hazardous to human health and ecosystem.	Remember	D
UNIT - II NATURAL RESOURCES			
Part – A (Short Answer Questions)			
1	Discuss some of the water resources problems in India.	Remember	A
2	Discuss the methods of flood control.	Understand	C
3	Define desertification?	Remember	A
4	Define aquifer?	Understand	B
5	List the environmental effects of using of mineral resources?	Understand	C
6	Define mineral? What is its use?	Remember	D
7	Name the non renewable resources?	Understand	A
8	Define water logging?	Remember	C
9	Define soil erosion?	Remember	A
10	List the effects of soil pollution?	Understand	A
11	Define green fuels?	Understand	A
12	Outline the role of geo thermal energy in India?	Remember	A
13	List the different type's energies which can be derived from the ocean?	Understand	A
14	Define solar cells.	Remember	A
15	Define pesticides? Mention it types.	Understand	A

Part - B (Long Answer Questions)			
1	List the Natural resources and write the classification of resources.	Remember	A
2	Explain the Big dams - Benefits and problems.	Understand	D
3	List the Mineral Resources, uses and exploitation?	Remember	A
4	List the alternate energy sources? Explain their present status, merits and demerits.	Understand	D
5	Explain the environmental impacts of (i) Fertilizer – Pesticides (ii). Over grazing.	Remember	A
6	Define mining. Explain various environmental impacts of mineral extraction.	Understand	D
7	List the importance of forest resources for economic and ecological wealth of country?	Understand	A
8	Discuss about the soil texture, structure and its composition.	Remember	D
9	Write a short note on wind energy; also discuss its advantages and limitations.	Understand	D
10	List the different types of energies which can be derived from the ocean? Explain briefly along with their advantages and limitations.	Understand	D
11	Discuss the problems of over exploitation of ground water.	Understand	B
12	Explain the causes for floods.	Remember	B
13	Enlist different surface and ground water resources.	Remember	A
14	Differentiate soil texture and structure	Remember	A
15	List the different types of natural resources	Remember	A
Part – C (Problem Solving and Critical Thinking)			
1	Prepare a detailed report on the management of water and waste water in your town/city?	Understand	A
2	Discuss with the help of a case study, how big dams have affected forests and tribal?	Remember	A
UNIT-III BIODIVERSITY AND BIOTIC RESOURCES			
Part - A (Short Answer Questions)			
1	Differentiate between endanger and endemic species.	Understand	A
2	Define national park? Name few such parks in India.	Remember	C
3	Define red data book?	Understand	A
4	Outline in situ and ex situ conservation of biodiversity?	Remember	D
5	What does NBPGR AND NBAGR stand for? Where are they located?	Understand	C
6	Define endemic species? Name some endemic species in india.	Remember	A
7	List the national wildlife sanctuaries?	Understand	A
8	Define biological diversity.	Understand	A
9	Differentiate genetic and species diversity.	Remember	C
10	Define national biodiversity act.	Understand	C
11	Underline India as a nation of mega diversity nation?	Remember	A
12	Define threatened species?	Understand	A
13	Define onsite conservation	Remember	D
14	Define bio piracy.	Understand	A
15	Define the term genetic banks.	Remember	A
Part – B (Long Answer Questions)			
1	Discuss the causes of man-wild life conflicts. Suggest suitable wild life conservation practices.	Remember	A
2	Define biodiversity? Explain different types of biodiversity	Understand	D
3	Explain in-situ and ex-situ conservation of biodiversity	Remember	A

4	Summarize consumptive use value, productive use value, social value and optional value of biodiversity?	Remember	A
5	How the study of biodiversity is beneficial to human life.	Remember	C
6	Explain the threats to biodiversity?	Remember	A
7	Define biodiversity; explain genetic biodiversity, species diversity and ecosystem diversity?	Remember	A
8	Discuss the status of India as a mega diversity nation of biodiversity.	Understand	A
9	List the different services that are contributed in various ways by biodiversity?	Remember	A
10	Explain endangered species of India?	Understand	C
11	Enumerate the biogeographical classification of India.	Remember	A
12	Explain hot spots of biodiversity? Mention the three hot spots in India	Understand	B
13	List the major causes of man-wild life conflict?	Remember	A
14	List the major threats to biodiversity?	Understand	B
15	List the indirect values of biodiversity.	Remember	B
Part – C (Problem Solving and Critical Thinking)			
1	Explain environmental hot spots of your city? Explain the possible factors observed by you for degradation of quality of hot spot. Suggest suitable engineering measure to restore their quality.	Understand	D
2	List the different developmental activities, including construction of dams, affect the biodiversity and action need to be taken to conserve them.	Remember	C
UNIT-IV			
ENVIRONMENTAL POLLUTION AND CONTROL TECHNOLOGIES			
Part – A (Short Answer Questions)			
1	Define environmental pollution.	Remember	A
2	Define air pollution?	Understand	A
3	Mention two important controlling devices of air pollution used in industries.	Remember	A
4	Mention the major sources of primary air pollutants.	Understand	B
5	Define water pollution.	Remember	C
6	List the various types of water pollution?	Understand	A
7	Mention the main treatment methods meant for industrial effluents.	Understand	A
8	Differentiate between aerobic oxidation and anaerobic oxidation.	Understand	B
9	Define eutrophication.	Understand	B
10	Define Bod and Cod	Remember	D
11	Differentiate between blue baby syndrome and itai-itai disease	Understand	B
12	Define soil pollution.	Remember	A
13	Underline the monitoring of soil pollution made?	Remember	A
14	Define noise pollution.	Understand	B
15	Describe an account of decibel scale for the measurement of Sound.	Understand	A
Part – B (Long Answer Questions)			
1	Define environmental pollution and explain their types and effects.	Understand	A
2	Define air pollution and describe the technologies for the control of air pollution.	Remember	B
3	Explain primary and secondary sources of air pollution?	Understand	D
4	List the effects of air pollution on plants, animals and human beings.	Remember	B
5	Explain automobile pollution and industrial pollution.	Understand	C
6	List the main stages of treatment of domestic sewage?	Remember	B

7	List the chemical treatments for industrial effluents?	Remember	A
8	Mention some of the water borne diseases and the name of the pathogenic organisms involved in it.	Remember	A
9	Enumerate the various effects of soil pollution.	Understand	B
10	List the physical, physiological and psychological effects of noise.	Remember	D
11	Describe National ambient air quality standards.	Remember	A
12	Define water pollution and explain point and non point sources of water pollution.	Understand	A
13	Explain sewage water treatment plants, effluent water treatment plants and common effluent treatment plants.	Remember	D
14	List the effects of water pollution and enumerate drinking water quality standards	Understand	D
15	Explain the methods for the control of water pollution.	Remember	A

Part – C (Problem Solving and Critical Thinking)

1	List out the Sewage treatment plants, effluent treatment plants and common effluent treatment plants in your vicinity.	Understand	A
2	Explain the problems encountered in the disposal of solid waste from various sources?	Remember	B
3	Explain the e-waste can be effectively managed.	Understand	D

UNIT-V
ENVIRONMENTAL POLICIES, LEGISLATIONS, RULES AND REGULATIONS

Part - A (Short Answer Questions)

1	List the objectives of Air pollution act.	Remember	B
2	Explain the necessity of wild life protection act.	Understand	C
3	Explain the necessity of various environmental legislations.	Remember	A
4	Mention the objectives of environmental protection act.	Understand	D
5	Describe water cess and water pollution as defined by water pollution cess act, 1974.	Remember	C
6	List the bio-medical wastes? What are the rules to manage and handle them?	Understand	B
7	Name the governmental organization/departments responsible for the protection of the environment.	Remember	C
8	Name the role assigned to central pollution and state pollution control board under the water pollution and prevention act.	Understand	C
9	Define environmental impact assessment?	Remember	D
10	Define Environmental Impact Assessment and Environmental Management Plan.	Understand	B
11	Explain Life Cycle Assessment (LCA).	Remember	D
12	Define Ecological Foot Print.	Remember	B
13	Enumerate the various effects of Urban Sprawl.	Remember	A
14	Discuss low carbon life style.	Remember	A
15	Explain the effects of crazy consumerism.	Remember	A

Part - B (Long Answer Questions)

1	Discuss the salient features of Air Act	Understand	C
2	Explain Water Act.	Remember	B
3	Explain environmental protection Act.	Understand	A
4	List the major provisions in Forest Conservation Act 1980	Remember	D
5	Discuss the salient features of Wild life protection Act	Understand	A
6	List the major municipal solid waste management and handling rules	Remember	B
7	Define biomedical wastes? What are the rules to manage and handle them?	Understand	D
8	Define hazardous wastes? Discuss the rules to manage and handle	Remember	A

	them.		
9	Discuss the various types of impacts caused by the developmental activities with suitable examples.	Understand	B
10	Explain the methodology for EIA	Remember	C
11	Describe the impact of dams on socio-economic attribute.	Remember	B
12	Explain the concept of sustainable development.	Understand	C
13	Explain the necessity of environmental education.	Remember	A
14	Explain the concept of green building and Clean development mechanism(CDM)	Understand	D
15	Explain environmental management plan (EMP), remote sensing and GIS methods.	Remember	C
Part – C (Problem Solving and Critical Thinking)			
1	Environmental education necessary in the present context? What is your opinion about the environmental ethics?	Remember	C
2	Explain the role of remote sensing and GIS in environmental protection.	Understand	D

Prepared By:

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