SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF CIVIL ENGINEERING

QUESTION BANK

V SEMESTER

CE3531 – ENVIRONMENTAL STUDIES
(Common to all)

Regulation – 2023

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SUBJECT CODE & NAME: CE3531 - ENVIRONMENTAL STUDIES

SEM / YEAR: V / III

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 – endangered and endemic species of India – conservation of biodiversity: In-situ and ex-situ and Wild Life Act.			
PART - A			
Q.No	**Questions**	**BT Level**	**Competence**
1.	State the significance and scope of the environmental education	BT-1	Remember
2.	Define biodiversity	BT-1	Remember
3.	What are the types of grassland ecosystem?	BT-1	Remember
4.	What do you understand by "species biodiversity"? Give one example.	BT-1	Remember
5.	What are the functions of an ecosystem?	BT-1	Remember
6.	What are the causes of threats to biodiversity?	BT-1	Remember
7.	Where from the word environment is derived and what does it refer to?	BT-1	Remember
8.	What is biodiversity and what is its significance?	BT-1	Remember
9.	Define ecological pyramid.	BT-1	Remember
10.	List the biogeochemical cycle.	BT-1	Remember
11.	Differentiate Food Chain and Food Web.	BT-2	Understand
12.	What is bio-diversity hotspot? Give examples	BT-1	Remember
13.	Write the criteria to determine hotspot and name the hotspots in India.	BT-1	Remember
14.	What is the difference between endangered and endemic	BT-1	Remember

	species? Give examples.		
15.	What is an ecosystem? Give examples.	BT-1	Remember
16.	Write the various adoptive features of desert plants.	BT-1	Remember
17.	How does a biome differ from an ecosystem?	BT-1	Remember
18.	"India is a mega diversity nation" – Justify your answer.	BT-1	Remember
19.	Define environment and ecosystem.	BT-1	Remember
20.	What are the three types of biodiversity?	BT-1	Remember
21.	Differentiate between in-situ and ex-situ conservation methods.	BT-2	Understand
22.	What is ecological succession?	BT-1	Remember
23.	Write the various adoptive features of desert plants?	BT-1	Remember
24.	What are autotrophic and heterotrophic components of an ecosystem? Give examples.	BT-1	Remember
25.	Write the biotic and abiotic components of an ecosystem?	BT-1	Remember
	PART - B		
Q.No	**Questions**	**BT Level**	**Competence**
1.	Define ecosystem. What are the classification of ecosystem and explain in detail?	BT-3	Application
2.	Explain the concepts of food chain and food web.	BT-3	Application
3.	What is Biodiversity? Discuss the genetic biodiversity and values of biodiversity.	BT-3	Application
4.	Discuss in detail about the threats faced by Indian biodiversity.	BT-3	Application
5.	Explain the structure and functions of a forest ecosystem.	BT-3	Application
6.	Discuss the structure and functions of a desert ecosystem.	BT-3	Application
7.	Describe the structure and functions of a grassland ecosystem.	BT-3	Application
8.	Outline the structure and functions of an aquatic ecosystem.	BT-3	Application
9.	Explain briefly the energy flow through ecosystem.	BT-3	Application
10.	Write about Insitu and Exsitu conservation of biodiversity.	BT-3	Application
11.	Define Ecological succession. Classify the types of succession and explain in detail.	BT-3	Application
12.	Explain the structure and function of an ecosystem.	BT-3	Application
13.	What do you understand by hot spots of biodiversity? Name and briefly describe two how spots of biodiversity that extent in India.	BT-3	Application

14.	Discuss the various threats faced by Indian biodiversity.	BT-3	Application
15.	Explain the features of ecological pyramids including the types of pyramids.	BT-3	Application
16.	Explain in details about the Carbon Cycle, Nitrogen Cycle and Oxygen Cycle.	BT-3	Application
17.	Discuss in detail about the energy flow in an ecosystem.	BT-3	Application

UNIT-II ENVIRONMENTAL POLLUTION			
Causes, Effects and Preventive measures of Water, Soil, Air and Noise Pollutions. Solid, Hazardous and E-Waste management. Case studies on Occupational Health and Safety Management system (OHASMS). Environmental protection, Environmental protection acts, Environmental policies and various Environmental Programmes conducted around the world.			
PART - A			
Q.No	**Questions**	**BT Level**	**Competence**
1.	Give four important sources of air pollution.	BT-1	Remember
2.	Give two effects of noise pollution on human being.	BT-1	Remember
3.	Name any four air pollutants, and their sources and effects.	BT-1	Remember
4.	What do you understand by soil pollution?	BT-1	Remember
5.	What are the causes of noise pollution? Define Decibel.	BT-1	Remember
6.	What are primary and secondary air pollutants? Give examples.	BT-1	Remember
7.	Define BOD and COD.	BT-1	Remember
8.	What is photochemical smog?	BT-1	Remember
9.	Specify the effects of air pollution.	BT-1	Remember
10.	What is air pollution?	BT-1	Remember
11.	What are the major causes for the marine pollution?	BT-1	Remember
12.	Differentiate between hazardous waste and e-waste.	BT-2	Understand
13.	How is cyclone formed?	BT-1	Remember
14.	What is called thermal pollution?	BT-1	Remember
15.	How does a sound cause noise pollution?	BT-1	Remember
16.	Mention the effects of nuclear wastes in humans	BT-1	Remember
17.	What do you understand by the term “soil pollution”?	BT-1	Remember
18.	State the role and responsibility of an individual in the prevention of pollution.	BT-1	Remember
19.	Name any four environmental protection acts in India.	BT-1	Remember
20.	What is e-waste?	BT-1	Remember
21.	What is Occupational Health and Safety Management System (OHSMS)?	BT-1	Remember
22.	Write the salient features of Forest Conservation Act.	BT-1	Remember
23.	What are the objectives of energy management.	BT-1	Remember

24.	What is the objective of Environment Protection Act 1986?	BT-1	Remember
25.	List any two global environmental programmes and their objectives.	BT-1	Remember
	PART - B		
Q.No	**Questions**	**BT Level**	**Competence**
1.	Define air pollution .What are the sources of air pollution? Explain the approach to control air pollution.	BT-3	Application
2.	Explain the causes, effects and control measures of water pollution.	BT-3	Application
3.	Elaborate on the causes and impacts of noise pollution and thermal pollution.	BT-3	Application
4.	What is OHASMS? Explain it with any one case study.	BT-3	Application
5.	Explain the steps involved in hazardous waste management.	BT-3	Application
6.	Give detailed note on Water Act and Air Act.	BT-3	Application
7.	Write a detailed note on solid, hazardous, and e-waste management.	BT-3	Application
8.	Elaborate on the causes and impacts of noise pollution.	BT-3	Application
9.	Enlist the rules of management and handling biomedical waste and analyze critically the problems associated with the implementation.	BT-3	Application
10.	Discuss briefly the methods of disposal of municipal solid waste management.	BT-3	Application
11.	Explain the various steps involved in solid waste management.	BT-3	Application
12.	Explain in detail about the waste minimization techniques.	BT-3	Application
13.	What are e-waste? Explain its preventive measures.	BT-3	Application
14.	Write in detail about the salient features of Environment Protection Act.	BT-3	Application
15.	Explain the importance of environmental protection. Describe key environmental protection acts and policies in India.	BT-3	Application
16.	Discuss the role of individuals in the prevention and control of environmental pollution.	BT-3	Application
17.	Discuss various international environmental programmes and their significance.	BT-3	Application

UNIT-III			
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.			
PART - A			
Q.No	**Questions**	**BT Level**	**Competence**
1.	What are the different types of new energy resources?	BT-1	Remember
2.	What is solar energy?	BT-1	Remember
3.	What is Bio-mass energy?	BT-1	Remember
4.	What are renewable and non-renewable resources?	BT-1	Remember
5.	What is land subsidence?	BT-1	Remember
6.	What are the objectives of energy management?	BT-1	Remember
7.	What is meant by geothermal energy?	BT-1	Remember
8.	Why alternative energy resources are required?	BT-1	Remember
9.	List out the application of wind energy.	BT-1	Remember
10.	What is meant by nuclear energy?	BT-1	Remember
11.	What are the sources of hydrogen?	BT-1	Remember
12.	List the different types of ocean energy.	BT-1	Remember
13.	What is meant by bio gas? Mention its uses.	BT-1	Remember
14.	What are the energy needs procured for India?	BT-1	Remember
15.	Define non-renewable resources.	BT-1	Remember
16.	What is energy conservation? How is it achieved?	BT-1	Remember
17.	Differentiate between energy management and energy conservation.	BT-2	Understand
18.	What is DESS? Mention its components.	BT-1	Remember
19.	Compare geothermal energy and ocean energy based on origin and method of power generation.	BT-2	Understand
20.	What are the disadvantages of hydrogen fuel cells?	BT-1	Remember
21.	List the merits and demerits of tidal energy.	BT-1	Remember
22.	Mention some important applications of geothermal energy (GTE).	BT-1	Remember
23.	Enlist the advantages and disadvantages of geothermal energy.	BT-1	Remember
24.	What are the problems of using hydrogen as a new energy	BT-1	Remember

	source		
25.	Distinguish between hydrogen energy and tidal energy in terms of source and application.	BT-2	Understand
	PART - B		
Q.No	**Questions**	**BT Level**	**Competence**
1.	Explain the principle and various steps involved in the energy management.	BT-3	Application
2.	Describe the different types of alternate energy sources.	BT-3	Application
3.	What are the objectives, principle and importance of energy conservation?	BT-3	Application
4.	Identify and analyze the challenges and solutions associated with renewable energy.	BT-3	Application
5.	Explain the role of forests in carbon sequestration and climate regulation.	BT-3	Application
6.	Discuss the benefits and challenges of using nuclear energy as a non-renewable energy source.	BT-3	Application
7.	Describe the environmental impacts of non-renewable energy sources such as fossil fuels.	BT-3	Application
8.	Explain the principles and benefits of sustainable land management.	BT-3	Application
9.	Compare and contrast tidal energy and geothermal energy in terms of their sources, working principles, advantages, and limitations.	BT-3	Application
10.	Explain the concept of energy management and energy conservation. Why are they important in today‟s world?	BT-3	Application
11.	Discuss the environmental benefits and challenges of renewable energy sources such as solar and wind energy.	BT-3	Application
12.	What is meant by GTE and how is it manufactured. Explain the applications of GTE.	BT-3	Application
13.	What is ocean energy? Explain various ocean energy resources and the principle of tidal energy conversion.	BT-3	Application
14.	Explain the ways through which conservation of energy is made.	BT-3	Application
15.	Write detailed notes on wind energy.	BT-3	Application
16.	Discuss the need for developing new energy sources. Explain any three types of new energy sources with their applications.	BT-3	Application
17.	Explain the various methods of harvesting solar energy.	BT-3	Application

UNIT-IV SUSTAINABILITY AND MANAGEMENT			
Definition of Sustainability, Aspects of Sustainability, Transition from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs). The Role of UN and the Need for SDGs and Adoption by the World, Scope and Inclusion and Agenda 2030, Our Common Future and Philosophy behind SDGs Design for sustainability, Thinking Alternatives and Innovation, Causal Mapping, Systemic Mapping and Problem Identification Identifying probable interventions for Sustainable Development, Framework and Structuring of Seventeen SDGs.			
PART - A			
Q.No	**Questions**	**BT Level**	**Competence**
1.	What is meant by sustainable development?	BT-1	Remember
2.	What are the four dimensions of sustainable development?	BT-1	Remember
3.	Why does the world need sustainable development goals?	BT-1	Remember
4.	State Earth Summit - 1992.	BT-1	Remember
5.	What is GDP?	BT-1	Remember
6.	Give the types of GDP.	BT-1	Remember
7.	How do the proposed SDGs relate to the Millennium Development Goals (MDGs)?	BT-1	Remember
8.	Are the proposed SDGs prioritized? How have they been ordered?	BT-1	Remember
9.	How will you calculate GDP?	BT-1	Remember
10.	What is Agenda 2030, and what does it include?	BT-1	Remember
11.	Write any 4 millennium development goals.	BT-2	Understand
12.	Write any 4 intervention areas of sustainable development goals.	BT-2	Understand
13.	What is the role of the United Nations in promoting the SDGs?	BT-1	Remember
14.	Why is hunger included under poverty instead of agriculture?	BT-1	Remember
15.	How do the proposed SDGs deal with inequalities?	BT-1	Remember
16.	Compare energy management and energy conservation.	BT-2	Understand
17.	Distinguish between causal mapping and systemic mapping in sustainable development.	BT-2	Understand
18.	Define carbon credit. Write any 3 advantages of carbon credits.	BT-1	Remember

19.	What is the reasoning behind the focus on highly vulnerable states and regions?	BT-1	Remember
20.	Enlist any 8 SDG goals.	BT-1	Remember
21.	What is meant by measuring "subjective well-being and social capital" (Target 5c)?	BT-1	Remember
22.	Why is there no stand--alone goal on peace and security?	BT-1	Remember
23.	What are the sources of carbon footprint?	BT-1	Remember
24.	What were the Millennium Development Goals (MDGs)?	BT-1	Remember
25.	How do SDGs differ from MDGs in terms of scope and approach?	BT-1	Remember
	PART - B		
Q.No	**Questions**	**BT Level**	**Competence**
1.	Define sustainability and explain its three main aspects.	BT-3	Application
2.	Describe the transition from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs).	BT-3	Application
3.	What is the role of the United Nations in promoting sustainable development globally?	BT-3	Application
4.	What is GDP? How is it calculated? Explain its merits.	BT-3	Application
5.	What is Agenda 2030? Discuss its significance and key components.	BT-3	Application
6.	What is meant by „Our Common Future“? How does it relate to sustainability?	BT-3	Application
7.	Explain the economic and social challenges of sustainability.	BT-3	Application
8.	Analyze the importance of global partnerships and the role of the private sector in achieving the SDGs.	BT-3	Application
9.	Discuss how innovation and thinking alternatives contribute to achieving sustainability goals.	BT-3	Application
10.	Explain the differences between sustainability and unsustainability.	BT-3	Application
11.	What is meant by carbon credit? Explain its types and merits.	BT-3	Application
12.	Outline the framework used to structure the seventeen Sustainable Development Goals (SDGs).	BT-3	Application
13.	Explain the sustainable development indicators.	BT-3	Application
14.	Discuss the role of technology and digital innovation in	BT-3	Application

	accelerating the achievement of SDGs.		
15.	What is causal mapping? Describe how it helps in identifying problems related to sustainable development.	BT-3	Application
16.	Explain the sources, causes and remedy measures of carbon foot print.	BT-3	Application
17.	Explain how have recent global challenges like the COVID-19 pandemic affected progress towards the SDGs?	BT-3	Application

UNIT-V SUSTAINABILITY PRACTICES			
Zero waste and 3R concept, ISO 14000 Series, Life cycle assessment, Environmental Impact Assessment. Sustainable habitat: Green buildings, Green materials, Energy Cycles-carbon cycle, emission and sequestration, Green Engineering: Sustainable urbanization- Socio-economical and technological change.			
PART - A			
Q.No	**Questions**	**BT Level**	**Competence**
1.	What is meant by 3R principle?	BT-1	Remember
2.	What is zero waste?	BT-1	Remember
3.	What are the benefits of zero waste?	BT-1	Remember
4.	Define R concept	BT-1	Remember
5.	Give any 5 importance of 3 Rs	BT-1	Remember
6.	Define circular economy.	BT-1	Remember
7.	What are the benefits of circular economy?	BT-1	Remember
8.	What is ISO?	BT-1	Remember
9.	What is ISO 14000?	BT-1	Remember
10.	What is carbon cycle?	BT-1	Remember
11.	What is material life cycle assessment?	BT-1	Remember
12.	What are the limitations of life cycle assessment?	BT-1	Remember
13.	What is EIA?	BT-1	Remember
14.	What are the objectives of EIA?	BT-1	Remember
15.	What is sustainable habitat?	BT-1	Remember
16.	What is carbon emission? Give its harmful effects.	BT-1	Remember
17.	What is carbon sequestration and why is it important?	BT-1	Remember
18.	What are green buildings and their importance?	BT-1	Remember
19.	What are the components of green buildings?	BT-1	Remember
20.	What is sustainable urbanization?	BT-1	Remember
21.	What is biomass energy?	BT-1	Remember
22.	Tell about the carbon cycle in the context of energy cycles.	BT-1	Remember
23.	What technological changes support green engineering?	BT-1	Remember

24.	What are the benefits of using green materials in construction?	BT-1	Remember
25.	Define sustainable development.	BT-1	Remember
	PART - B		
Q.No	**Questions**	**BT Level**	**Competence**
1.	Explain the concept of zero waste and its significance in sustainable waste management.	BT-3	Application
2.	What is Environmental Impact Assessment? Explain the objectives, benefits various elements of EIA.	BT-3	Application
3.	What is sustainable habitat? Explain its characteristics and objectives of it.	BT-3	Application
4.	What is green building? Explain its criteria and features.	BT-3	Application
5.	Explain the principles, goal and benefits of green engineering.	BT-3	Application
6.	Describe the 3R concept (Reduce, Reuse, Recycle) and discuss how it helps in environmental conservation.	BT-3	Application
7.	What is the ISO 14000 series? Discuss its objectives and importance for organizations.	BT-3	Application
8.	What is carbon emission? Explain the types and remedy.	BT-3	Application
9.	Write notes on non-conventional sources of energy.	BT-3	Application
10.	Explain the process and purpose of Environmental Impact Assessment (EIA) in development projects.	BT-3	Application
11.	Describe the key steps involved in conducting an Environmental Impact Assessment (EIA) and its significance for policy-making.	BT-3	Application
12.	What is life cycle assessment? Explain the various steps involved in LCA.	BT-3	Application
13.	Define carbon sequestration. Explain the various types of carbon sequestration.	BT-3	Application
14.	What are the main challenges in implementing sustainable forest management	BT-3	Application

15.	Explain the carbon cycle and its role in energy cycles and environmental balance.	BT-3	Application
16.	Discuss about EIA 2020 notification in detail.	BT-3	Application
17.	Analyze the role of emission control in sustainable habitats and the technologies used to reduce emissions.	BT-4	Analyze