

**B.E (Civil Engineering) 4<sup>th</sup> Year 2<sup>nd</sup> Semester Examination, 2022**  
**(1<sup>st</sup> / 2<sup>nd</sup> Semester )**

**Subject: Ecology and Environmental Management**

Time: Two hours/Three hours/Four hours/Six hours

Full Marks: 100  
(50 marks for each part)

Use a separate Answer-Script for each part

No. of Question	Part-I	Marks
<b><u>Answer Question-I and any two questions from the rest</u></b>		
Q.1)	a) Define "Sustainable Development" and "Sustainable Development Goals". b) Draw the "Waste Management Hierarchy" diagram and justify the order of preference. c) Classify different "Waste Minimization Techniques" with the help of a neat schematic diagram. d) State the essential components of an effective "Environmental Management Plan (EMP)".	(3+2) (2+3) 5 5
Q.2)	a) Explain the significance of "Substitution of Raw Material" in achieving waste minimization for modern distilleries. b) State the significance of "Technology change" in achieving waste minimization for modern brick kilns.	7 8
Q.3)	a) What are the essential features of "Leopold Matrix method of Environmental Impact Analysis"? b) Discuss in brief on the steps followed in the "Semi-quantitative Index Method of Environmental Impact Analysis" to estimate the potential environmental impact.	6 9
Q.4)	a) Write short notes on i) Screening ii) Scoping in the context of "Environmental Impact Assessment". b) Describe the three-step process applied for impact mitigation for any type of developmental project with suitable examples.	(4+4) 7

**BACHELOR OF ENGINEERING (CIVIL ENGINEERING) , FOURTH YR, SECOND SEMESTER EXAMINATION 2022**

Use a separate Answer-Script for each part

**SUBJECT: ECOLOGY AND ENVIRONMENTAL MANAGEMENT**

Time:- Three hours

Full Marks-100

No. of Questions	Part II (Marks:50)	Marks
	<p>Answer any Three (3) question            Two (2) marks are reserved for neatness and to the point answer.            Assume relevant data if necessary</p>	
Q1.  a)  b)  c)  d)  e)  f)	<p>Write short notes on - (any four)</p> <p>Objective of ecology study</p> <p>Food web</p> <p>Biological magnification</p> <p>Natural ecosystem</p> <p>Community and species</p> <p>Ecological pyramid</p>	<p align="center">4 x 4 = 16</p>
Q2.  a)  b)	<p>Define Ecology. Write a few lines on its significance for civil engineering profession. What are the different subdivisions of ecology as subject? What is landscape ecology?</p> <p>What is food chain? What are the characteristics features of food chain? Give some suitable example.</p>	<p align="center">2+3+5  6</p>
Q3.  a)  b)	<p>What do you understand by an ecological factor? Explain briefly the biotic components of an ecosystem.</p> <p>What is biogeochemical cycle? What is its significance? Draw a neat labeled sketch of nitrogen Cycle and explain briefly its significance with their limitation.</p>	<p align="center">6  10</p>

**BACHELOR OF ENGINEERING (CIVIL ENGINEERING-), FOURTH YR, SECOND SEMESTER EXAMINATION 2022**

. Use a separate Answer-Script for each part

**SUBJECT: ECOLOGY AND ENVIRONMENTAL MANAGEMENT**

Time:- Three hours

Full Marks-100

No. of Questions	Part II (Marks:50)	Marks
Q4.		
a)	Describe the major components of pond ecosystem with a neat sketch	8
b)	Briefly discuss on various attributes normally exist in the ecosystem? How the solar energy transform biotic and abiotic components of ecosystem.?	8

Ref No. -Ex/CE/5/T/405D//2022

**BACHELOR OF ENGINEERING (CIVIL ENGINEERING), FOURTH YR, SECOND SEMESTER EXAMINATION 2022**

Use a separate Answer-Script for each part

**SUBJECT: ECOLOGY AND ENVIRONMENTAL MANAGEMENT**

Time:- Three hours

-Full Marks-100

No. of Questions	Part II (Marks:50)	Marks
Q4.		
a)	Describe the major components of pond ecosystem with a neat sketch	8
b)	Briefly discuss on various attributes normally exist in the ecosystem? How the solar energy transform biotic and abiotic components of ecosystem.?	8