

BACHELOR OF ENGINEERING (CIVIL ENGINEERING) 2023**FOURTH YR, SECOND SEMESTER EXAMINATION 2023(SUPPLEMENTARY)**

Use a separate Answer-Script for each part

SUBJECT: ECOLOGY AND ENVIRONMENTAL MANAGEMENT**Time:- Three hours****Full Marks: 100****PART - I****Answer any Three (3) question****Two (2) marks are reserved for neatness and to the point answer.****Assume relevant data if necessary**

Q1.	Write short notes on :- (any four)	4 x 4= 16
a)	Ecological Pyramid	
b)	Food Chain	
c)	Biological Population	
d)	Aquatic Ecology	
e)	Artificial Ecosystem	
f)	Nutrient Flow with Energy Flow.	
Q2.		
a)	Define Ecology. What is the importance for studying Ecology ? What are the different subdivisions of ecology?	2+3+6
b)	.Justify the significance and importance of Biotic factors in ecological system?	5
Q3.		
a)	What do you understand by ecosystem? Explain briefly the components of an ecosystem	6
b)	What is biogeochemical cycle? What is its significance? Draw a neat labeled sketch of phosphate Cycle and explain briefly its significance with limitation.	10
Q4.		
a)	Describe the major components of pond ecosystem with a neat sketch	10
b)	Briefly discuss on various communities normally exist in the lotic zone in aquatic environment from producer to consumers with a neat sketch. Give suitable examples.	6

B.E (CIVIL ENGG.) 4th YEAR 2nd SEMESTER SUPPLEMENTARY EXAMINATION, 2023(1st/ 2ndSemester /Repeat/ Supplementary- / Annual /-Biannual)**SUBJECT: Ecology & Environmental Management****Full Marks: 50**

Question No.	Part-II	Marks
	Answer any five questions:	
Q.1)	a) State the objectives behind the 'Environmental Impact Assessment'. b) Draw the "Waste Management Hierarchy" diagram and justify the order of preference.	5 5
Q.2)	a) What are the essential features of "Battele Evaluation System of Environmental Impact Analysis"? b) What are the potential impacts of the following activities during the construction phase of any project? i) Site clearing ii) Civil Works iii) Operation of Heavy Equipment	4 6
Q.3)	a) Discuss in brief on the steps followed in the "Semi-quantitative Index Method of Environmental Impact Analysis" to estimate the potential environmental impact. b) What are objectives behind the recommendation of mitigation measures?	7 3
Q.4)	a) Describe the three-step process applied for impact mitigation for any type of developmental project b) State the mitigation measures recommended by MoEF for air and noise environment.	5 5
Q.5)	a) Explain the significance of "Recycling of Paint Sludge" in achieving waste minimization for automobile industry. b) State the significance of "Product Modification" in achieving waste minimization for distillery industry.	5 5
Q.6)	a) What do you mean by "Carrying Capacity of an environment"? b) Discuss on the "Verhulst Model of Population Dynamics" and its graphical interpretation.	3 7