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ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)

ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Mid-Semester Examination — Summer Semester 2022-2023

Course No. : CEE 4831 — Time: 1.5 Hours

Course Title : Environmental and Social Impact Assessment — Marks: 50

There are **3 (Three)** questions. Answer all questions. Programmable calculators are not allowed. Do not write on this question paper. The figures in the right margin indicate full marks and corresponding CO and PO. The Symbols have their usual meaning.

		Marks	COs	POs

1. EIA process for a proposed dam construction project assesses the impacts on local communities and the downstream river ecosystem by a team of researchers. They quantitively established a cause and effect relationship among the proposed actions and enviromental parameters in the following table.

Proposed Action / Resources	Immigration of Labor	Dam Construction	Transmission Line	Reservoir Filling	Heavy Metal Discharge	Growth of Aquatic Weeds	Relocation of Inhabitants
Health	5 / 8	4 / 6		5 / 8	4 / 7	6 / 6	
Spawning of Fish		3 / 4		3 / 6	3 / 7	5 / 5	
Archeological Artefacts	4 / 6			8 / 8			
Tourism			7 / 6	7 / 6			
Downstream water pollution		7 / 7		7 / 8	2 / 4		
Social and Economic Aspects							8 / 7
Forestry		4 / 2					
Fishery		2 / 5			2 / 5		
Navigation				6 / 5			
Aquatic Plants				6 / 5			

(a) What is the name of the matrix? Write down the differences between 'Network' and 'GIS and computer expert systems' method for this project. **(4) CO1 PO1**

(b) Calculate and list down the two most and least affected environmental parameters from the proposed action. Also, list the two most important project actions. **(8) CO2 PO2**

(c) "EIA ensures better protection of the environment and human health"- evaluate this statement according to UNEP definition of EIA. **(3) CO1 PO1**

(d) What is the significance of the "Zero alternative" in EIA and how is it used to evaluate the environmental impacts of proposed development projects? **(3) CO1 PO1**

2. (a) The proposed construction of an oil pipeline from Canada to the United States underwent a comprehensive EIA process to evaluate its potential impacts on the environment and local communities. The following table is a small part time dependent matrix of the project. What is the significance of the given numbers in the scale of 0 to 5 where 5 is the maximum value? (3) CO2 PO2

	Time dependent matrix	
Environmental component	Project action (Construction period 5 years)	
	Drainage congestion	excavation
Soil	43000	54310
Air quality	05432	44021

(b) What is scoping? Write down the steps involved during scoping. (4) CO1 PO1

(c) A chemical industry is to be constructed in an agricultural land which is next to the Dhaleshwari River and beside locality. Chemical waste contains mainly of lime, salt, chromium, lead and other inorganic substances. Answer the following- (10) CO3 PO6

(i) Identify and list associated impacts from the proposed project.

(ii) How do you analyze the above-mentioned impacts are likely to be significant? List down the most significant impacts from your proposed impacts.

(iii) What are the methods available for impact identification, prediction, and evaluation?

(iv) Which will be the best method suitable to analyze the proposed project in consideration of economy and accuracy? Justify your answer.

3. (a) Alta Wind Energy Centre wants to establish a wind farm project near the California Coast that runs along the Pacific Ocean. The environmental effects of the project, including impacts on air and water quality, wildlife and habitats, noise levels, and the visual landscape. (A wind farm in a coastal area is a group of wind turbines that are located near the coast to harness the wind energy because they often have strong and consistent wind speeds, making them ideal for generating wind power) (10) CO4 PO7

(i) Discuss the public participation methods needed to lessen the proposed project's impacts from the viewpoint of sustainability.

(ii) When (at what step) do you determine the necessity of EIA? What are the approaches for conducting that process?

(iii) What kind of people you would choose for performing EIA?

(iv) Describe the screening process that will be implemented by the Asian Development Bank (ADB) for the sustainability of the proposed project.

(b) What are the basic features of ECA,1995? Write down the different sectors which were considered for formulating the policies of Bangladesh in 1992. (5) CO5 PO8