

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
**ORGANISATION OF ISLAMIC COOPERATION (OIC)**

**DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT**

Mid-Semester Examination

Summer Semester, A. Y. 2020-2021

Course No. : CEE 4461

Time: 1.5 Hours

Course Title : Civil and Environmental Technology II

Marks: 75

There are 4 (Four) questions. Answer any 3 (Three) 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.

1. (a) Write down the differences among 'Checklists', 'Matrices', 'Networks', 'Overlays', 'GIS and computer expert systems' method? (10) CO1 PO1
- (b) 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 quantitatively established a cause and effect relationship among the proposed actions and environmental parameters in the following table. (10) CO2 PO1

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

- i. What is the name of the matrix?
- ii. List two most and least affected environmental parameters from the proposed action.
- iii. List three most important project actions.

- (c) What is the significance of the "Zero alternative" in EIA and how is it used to evaluate the environmental impacts of proposed development projects, especially in comparison to other alternatives such as mitigation measures or alternative sites? (5) CO1
2. (a) What is EIA? Write down the differences between EIA and IEE. (6) CO1 PO1
- (b) 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? (4) CO2 PO1

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

- (c) Rampal Power Plant which is a proposed coal-fired power plant in the Sundarbans mangrove forest underwent an EIA process to evaluate its potential impacts on the local environment and wildlife. Create a network diagram considering the following project activity – i) Release of air pollutants ii) Release of water pollutants. Identify primary, secondary and tertiary impact of this project. (6) CO2 PO1
- (d) What is scoping? Write down the steps involved during scoping. (9) CO1 PO1
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) CO2 PO1
- (i) Do you need an environmental clearance certificate?
- (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) Write down the process of getting the clearance certificate if needed.

- (b) Write down the issues to be addressed in formulation of Environmental policy. Also mention the process of formulation of a policy. (8) CO1 PO1
- (c) What are the basic features of ECA,1995? Write down the different sectors which were considered for formulating the policies of Bangladesh in 1992. (7) CO1 PO1
4. (a) 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) CO2 PO1
- (i) Identify and list associated impacts from the proposed project.
- (ii) How do you decide that 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 for the proposed project in consideration of economy and accuracy? Justify your answer.
- (b) What are the steps involved in the EIA process for a proposed chemical industry project? (8) CO1 PO1
- (c) "EIA ensures better protection of the environment and human health"- evaluate this statement according to UNEP definition of EIA. (7) CO1 PO1