

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Semester Final Examination

Course Number: CEE 4461

Course Title: Civil and Environmental Engineering
Technology II

Summer Semester: 2022–2023

Full Marks: 150

Time: 3.0 Hours

There are 6 (Six) questions. Answer ALL the questions. The figures in the right margin indicate full marks. COs and POs are also specified in the right margin of the questions. The symbols have their usual meaning.

1. (a) Suppose you are given the responsibility to review the process leading to the preparation of the EIA report of a treatment plant for a textile industry. What questions are you going to use to check if the EIA process was satisfactory and which rating scale are you going to use to answer the questions? [CO3, PO6: 12.5]
- (b) List down the headings and items which are included in an EIA report. [CO2, PO2: 10]
- (c) List down the steps that can help to achieve good practice in the review of an EIA report. [CO1, PO1: 2.5]
2. (a) The impact of project components on the environmental and social components for an interim water supply project has been assessed and the assessment report is shown in Table 1 in Appendix. Using weighted matrix method of impact analysis, point out the most harmful project activity and the most affected environmental or social component. [CO3, PO6: 12.5]
- (b) Explain the potential impacts of a rural road project and create a network diagram or flowchart showing direct, indirect, and cumulative impacts. [CO2, PO2: 10]
- (c) What are the different characteristics of an impact? [CO1, PO1: 2.5]
3. (a) The construction of a resort has been planned at Subolong union of Barkal upazila of Rangamati. The area is famous for its waterfalls and Kaptai Lake and also an abode of tribal people. Answer the following questions: [CO3, PO6: 12.5]
 - (i) One of the major shareholder of the project has demanded to conduct SIA for the project alongside EIA. Do you think this demand is reasonable? Justify your answer.
 - (ii) What issues should you keep in mind while conducting public participation session for the SIA in this scenario?
 - (iii) What do you think are the major social impacts that should be addressed in the SIA?
- (b) Explain elaborately what Social Impact Assessment (SIA) Addressed in the life of project stakeholders? [CO2, PO2: 10]
- (c) List down the variables and indicators that are categorized under political and social resources section of social assessment process cycle. [CO1, PO1: 2.5]

4. (a) Suppose you are assigned to prepare an EMP for a power plant project. Write the main points of the mitigation plans that you would suggest during the construction phase of the power plant. [CO3, PO6: 12.5]
- (b) i. Draw the framework for preparation of EMMP during construction and O&M phase of a development project. [CO2, PO2: 10]
 ii. Draw and explain the hierarchy of impact mitigation strategy.
- (c) What are the components of EMP? [CO1, PO1: 2.5]
5. (a) List down the practical aspects that needed to be considered for public consultation in an EIA process. [CO3, PO6: 12.5]
- (b) Identify the key activities and potential impacts on the human environment from social perspective during the construction, operation and decommissioning phases of a bridge construction project. [CO2, PO2: 10]
- (c) Write down the merits and demerits of public participation in an EIA process. [CO1, PO1: 2.5]
6. (a) For housing society development project in an area, infrastructural baseline data is required. You have enough time and human resource in hand to conduct a baseline survey. Which method of baseline data collection will you follow? Also make an outline of the survey you are going to conduct, select the study components and make a list of information you want to collect during the survey. [CO3, PO6: 12.5]
- (b) Draw a typical project cycle and then add components of EIA at its different stages. What changes can EIA bring when it is introduced in a project cycle? [CO2, PO2: 10]
- (c) Draw the generalized social impact model. [CO1, PO1: 2.5]

Table 1 for question 2(a)

	Importance Weighing (a)	Project Construction	Project in Operation	Solid Waste Disposal	Waste Water Discharge	Odor Generation	Total
Air Quality	12			30 (b)	30 (b)	40 (b)	
				4 (c)	4 (c)	5 (c)	
Water Quality	28		20 (b)	30 (b)	50 (b)		
				4 (c)	6 (c)	9 (c)	
Ecosystem	20			40 (b)	60 (b)		
					7 (c)	8 (c)	
Human Health	25	20 (b)	15 (b)	25 (b)	30 (b)		
			4 (c)	3 (c)	7 (c)	5 (c)	10 (b)
Socio economic condition	15	50 (b)	50 (b)			2 (c)	
			6 (c)	9 (c)			
Total	100						

a = relative weighing of environmental and social components (Total 100)

b = relative weighing of project component (Total 100)

c = Impact of project on environmental component (0-10)