

16

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANIZATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Semester: Semester Final Examination

Summer Semester: 2022-2023

Course No.: CEE 4831

Full Marks: 100

Course Title: Environmental and Social Impact Assessment

Time: 3 hours

There are 6 (Six) 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. Symbols convey their usual meanings. Assume reasonable data for any missing info.

- | | | Full
Marks | CO | PO |
|-----|--|---------------|-----|-----|
| 1. | The government plans to expand urban infrastructure by constructing a new highway through a suburban area. An ESIA is conducted to evaluate potential impacts on the environment and local communities by involving the stakeholders. | | | |
| (a) | Illustrate a flow chart depicting the sequence of activities involved in conducting a baseline survey for the project, particularly focusing on data collection and public participation. | 4 | CO1 | PO1 |
| (b) | Sketch a network diagram and identify primary, secondary and tertiary impacts of the project by considering the following project activities: i) Deforestation and habitat loss, ii) Increased traffic congestion & emissions, and iii) Disruption of local water bodies. | 8 | CO3 | PO6 |
| (c) | What are the key objectives of public participation in the ESIA process of the proposed project. How do they contribute to achieving sustainability goals? | 4 | CO4 | PO7 |
| 2. | You are a part of a team of renowned consultancy firm working for the Ministry of Road Transport and Bridges on "Greater Dhaka Sustainable Urban Transport Project". Seven flyovers may be built on the Dhaka-Narayanganj route under the Bus Rapid Transit (BRT) Line-X project. You must undertake a detailed ESIA report for the proposed BRT project. | | | |
| (a) | Explain the 6 basic process steps of ESIA with a diagram. | 3 | CO1 | PO1 |
| (b) | Prepare a 'Table of Contents' for an ESIA report on the proposed project. | 10 | CO1 | PO1 |
| (c) | A comprehensive review of the adequacy and quality of an ESIA report would address many important issues. Analyze the issues briefly. | 5 | CO2 | PO2 |
| 3. | A national development project, MRT Line 5, is proposed from Hemayetpur to Vatara (Northern Route) and Gabtoli to Dahserkandi (Southern Route). As a consultant you have identified several significant environmental impacts from the proposed project. Now you are in the final stage of the report and preparing an EMMP to protect environment from deterioration. | | | |
| (a) | Describe briefly the 7 components of EMMP to obtain sustainability. | 3 | CO4 | PO7 |
| (b) | Discuss about environmental monitoring in the perspective of sustainability. | 4 | CO4 | PO7 |
| (c) | Stakeholder analysis consists of four steps and seeks to answer a few fundamental questions to make it a sustainable development project. Explain briefly. | 7 | CO4 | PO7 |

4. (a) Sketch a diagram on different focuses of different levels of decision making with 3Ps in SEA. Describe 3Ps for evaluating environmental impacts in SEA. How does issues of 'why' and 'if' are strategic? 6 CO3 PO6
- (b) The main types of social impacts that occur as a result of the project related changes can be grouped into five overlapping categories. Describe briefly. 4 CO3 PO6
- (c) State the requirement for air quality standards according to National Ambient Air Quality Standards in Bangladesh and WHO guidelines (with Interim Target values). 6 CO5 PO8
5. A power plant construction project is proposed to establish adjacent to the DUET campus. What would be your prescribed EMMP to make it a sustainable development project in monitoring stage for the potential environmental impacts from the project? 16 CO4 PO7
- Mention the possible project activities and potential environmental impacts. What, where, how and when is the parameter to be monitored?
- Represent in a tabulated form by considering construction and operation phases only.
6. You are a part of a team of renowned consultancy firm who will work on a project, namely "Strategic and impact assessment and evaluation of existing climatic, environmental and ecosystem intervention and development projects in Cox's Bazar, Bangladesh". 20 CO3 PO6
- To analyze the potential impacts, prepare technical and financial proposals (budget) for this project including table of contents, detailed methods and tools, sample size, number of events and corresponding respondents.
- Consider 5 Upazilas in Cox's Bazar comprise of 10,00,000 households. Assume reasonable data/value for this task.

Formulae

$$n = deff + \frac{N \cdot \hat{p} \cdot \hat{q}}{\frac{d^2}{z_{1-\alpha}^2 \cdot (N-1) + \hat{p} \cdot \hat{q}}}$$

$$n_{corrected} = \frac{n}{response\ rate}$$