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Program: B. Sc. in Civil Engineering
Semester: 8th Semester

Date: 6 March 2024
Time: 10:00 am – 11:30 am

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

Midterm Examination
Course Number: CEE 4807
Course Title: Socioeconomic Aspects of Development Projects

Summer Semester: 2022 - 2023
Full Marks: 75
Time: 90 Minutes

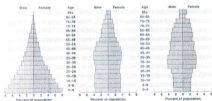
There are 3 (Three) questions. Answer all questions. The symbols have their usual meanings. Marks of each question and corresponding CO and PO are provided in brackets. The examination period is 1.5 hours.

1. (a) What is the consensus of development? Which further goals may also be included? State the objectives of sustainable development. (5) (CO1) (PO1)
- (b) A country wants to achieve HDI 0.8. The country's life expectancy at birth is 70 years, expected years of schooling is 10 years, and mean years of schooling is 5 years. What is the expected GNI per capita (2017 PPP\$) for that country? The table below may be considered for reference values. (10) (CO2) (PO2)

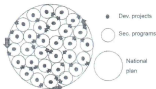
Dimension	Indicator	Minimum	Maximum
Health	Life expectancy (years)	20	85
Education	Expected years of schooling (years)	0	18
	Mean years of schooling (years)	0	15
Standard of living	GNI per capita (2017 PPP\$)	100	75,000

Derive linear equations to calculate the health, education, and standard of living dimension indices using the table above.

- (c) Please classify the following 3 (three) age structures and justify the categorization. (10) (CO3) (PO6)



2. (a) Explain the 7 (seven) types of focus group discussion. (5)
(CO1)
(PO1)
- (b) Assess the linkage among development, environmental degradation, and poverty. Apply informed reasoning from socioeconomic aspects of development projects to appraise the following figure. (10)
(CO3)
(PO6)



- (c) A country wants to achieve HDI to IHDI ratio 1.50 ($HDI/IHDI = 1.50$). The inequality measures can be considered as 0.09 and 0.06 for life expectancy, mean years of schooling, respectively. Derive the loss (in %) due to inequality and coefficient of human inequality. Assume any reasonable value if needed. (10)
(CO2)
(PO2)

3. (a) Draw the contrast among GNI, GNP, and GDP. Clarify the weaknesses of GNP as a development indicator. (10)
(CO1)
(PO1)

- (b) Develop and analyze the flowchart of deriving HDI and IHDI in terms of dimensions, indicators, and weights. (5)
(CO2)
(PO2)

- (c) Assess the 5 highway alternatives from the table below and derive a logical prioritization framework. Generalize the framework for highway improvement projects for Bangladesh. (10)
(CO3)
(PO6)

Highway	AADT (veh/day)	v/c	Environmental Impact (EI)
SR-1	10,000	0.6	10
SR-2	2,000	0.3	2
SR-3	14,000	0.9	14
SR-4	18,000	0.6	10
SR-5	10,000	0.9	18