Master of Arts Examination, 2023

(2nd Year, 2nd Semester)

ECONOMICS

[Economics of Social Sector]

Time : Two Hours   Full Marks : 30

Answer question **no. 1** and any ***two*** from the rest.

1. Answer any ***four*** : 2.5×4=10

   a) How do you examine the role of human capital in explaining the Solow Residual?

   b) Show that the changes in any of the different dimensions of well-being go unnoticed in new HDI (after 2010).

   c) Distinguish between the Gini Index and the Theil Index.

   d) Evaluate the Human Poverty Index (HPI) if the power mean (α) tends to infinity.

   e) Deduce GE(1) from the following Generalized Entropy (GE) Class of Inequality measure:

   $GE(\alpha) = \frac{1}{n(\alpha^2 - \alpha)} \sum \left[\left(\frac{X_i}{\bar{X}} \right)^{\alpha} - 1 \right]$ where, α is the sensitivity parameter, n stands for number of invividuals and X_i stands for level of income of the i-th individual.

f) Why is the Multidimensional Poverty Index (of Akire-Foster, 2009) superior to the Human Poverty Index (of Anand and Sen, 1997)?

2. Distinguish between Demographic Transition and Demographic Dividend. How does demographic dividend affect economic growth? 2+8

3. What are the social values incorporated in measuring Disability Adjusted Life Years (DALYs)? Deduce the following DALYs equation: $DALY(x) =$

$$-\frac{DCe^{-\alpha\beta}}{(\beta+r)^2}\left[e^{-L(\beta+r)}\{1+(\beta+r).(a+L)\}-\{1+a(\beta+r)\}\right],$$

where, D = disability weight, C = positive constant, a = Onset year of disability, β = age-weighting parameter (>0), L=years left after onset and r = discount rate. 4+6

4. Distinguish between Gender Development Index (GDI) and Gender Inequality Index (GII). Find GII of a country from the following information: 4+6

Health		Empowerment		Labor Market
MMR	AFR	PR	Schooling	Labor Market Participation
F: 530	73.5	0.229	0.243	0.719
M: NA	NA	0.771	0.203	0.787

Note: F=female, M=male, MMR=maternal mortality rate, AFR=adolescent fertility rate, PR=parliamentary representation, NA=not applicable

5. Show that when the α averages of P_{1j}, P_{2j}, P_{3j} are formed for each j (j=1, 2...m; all are mutually exclusive and exhaustive groups) to give $P_j(\alpha)$, the population (n) weighted average of the $P_j(\alpha)$ exceeds $P(\alpha)$; mathematically show that for $\alpha \geq 1$, $\sum_{j=1}^{m}\frac{n_j}{n}P_j(\alpha) \geq P(\alpha)$ where α stands for order of the average and $\sum n_j = n$. Show that the weak inequality in the above proposition will be a strict inequality unless either $\alpha = 1$ or (P_{1j}, P_2j, P_{3j}) and (P_{lk}, P_{2k}, P_{3k}) are proportional for all j and k.

6+4