

Master of Arts Examination: 2017
(2nd Year, 4th Semester)
Economics
Economics of Social Sector

Time: Two Hours

Full Marks: 30

(Answer question number 1 and any two from the rest)

1. Answer any four: (2.5 x 4)

- (a) Why income is discounted in measuring the HDI (following the UNDP methodology developed in 1991) across the countries in the world?
- (b) Can Human Poverty Index be considered as Head Count Ratio? Give reasons for your answer. (1+1.5)
- (c) What do you mean by Equally Distributed Equivalent Achievement (EDEA) used in comparing achievements two or more mutually exclusive groups?
- (d) Show that when the α averages of P_{1j} , P_{2j} , P_{3j} are formed for each j ($j=1, 2, \dots, m$; all are mutually exclusive and exhaustive groups) to give $P_j(\alpha)$, the population 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.

- (e) Prove that if α (power mean of HPI) tends to infinity there is no substitutability between any two poverty sub-indices but if it increases from 1, the elasticity of substitution decreases monotonically from infinity to zero.
- (f) What are the advantages of Entropy Class of measure of inequality over Lorenz Class?
- (g) How do you relate between Atkinson Index and GE measure of inequality?

2. Following the endogenous growth model, critically examine the importance of investment in social sector in economic development in a transition economy like India. 10

3. Develop a suitable formula that makes a relationship between force of mortality and resistance to disease in the context of graduation of mortality (viz. l_x column of the Life Table). Derive the equation of Disability Adjusted Life Years (DALYs). (5+5)

4. Formulate an econometric model on educational services with two variables teacher and capital as inputs (with special reference to primary education), which follows constant returns to scale; assuming the rental rate on capital does not vary across countries. How can you estimate the effect of price variation from the data on teachers' wages? How can you decompose the school expenditures per school going child into a multiplicative function of four observable components viz. quantity, quality, and capital intensity and teacher salaries? What inference can you draw from these results? (4+3+2+1)

5. Distinguish between Gender Development Index (GDI) and Gender Empowerment Measure (GEM). Calculate the Gender Development Index (GDI) of country A, following the Modified formulae developed in the year 1995/1996. The parameter of inequality aversion (ϵ) is set at 2. The following information is given in respect of country A:

Real GDP per capita (poverty level adjusted): PPP \$ 2120
 Max. country income: PPP(\$) 40,000. Min country income: PPP(\$) 100
 Percentage share of parliamentary representation: Females: 12.1, Males: 87.9
 Percentage share of administrative and managerial position: Females: 10.1, Males: 89.9
 Percentage share of professional and technical positions: Females: 24.4, Males: 75.6
 Percentage share of population: Females: 50.38, Males: 49.62
 Percentage share of economically active population: Females: 37.4, Males: 62.6
 Ratio of female non-agricultural wage to male non-agricultural wage: 0.75
 Calculate the Gender Empowerment Measure (GEM) of country, A. (2+8)