

MASTER OF ARTS EXAMINATION, 2019
(2nd Year, 4th Semester)
ECONOMICS
ECONOMICS OF SOCIAL SECTOR

Time : Two hours

Full Marks : 30

(Answer question number 1 and two from the rest)

1. Answer any four:

4 x 2.5=10

(a) Derive Mean Log Deviation from the Generalized Entropy (GE) measure of inequality.

(b) Given that $X_{EDEA} = \left[P_f \cdot X_f^{1-\epsilon} + P_m \cdot X_m^{1-\epsilon} \right]^{\frac{1}{1-\epsilon}}$ where, $P_f = \frac{N_f}{N_f + N_m}$, $P_m = \frac{N_m}{N_f + N_m}$. Here, X_{EDEA} is defined as equally distributed equivalent achievement formed from female (X_f) and male (X_m) achievements; P_f and P_m are the population proportions of female and male respectively; the term ϵ stands for inequality aversion parameter. How do you interpret the value of X_{EDEA} if ϵ tends to one?

(c) How do you reconcile between Sen Index and FGT Index of income (or consumption) poverty?

(d) Define Demographic Dividend. How is it related to growth of income per capita? (1+1.5)

(e) Can Human Poverty Index (HPI) developed by Sen and Anand (1997) be considered as head count ratio (HCR)? Give reasons for your answer.

(f) Is Entropy measure of inequality superior to Gini Coefficient? Give reasons for your answer.

2. Formulate an econometric model on educational services with two variables labor 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? Do you agree with the view that the sum of the log linear regression coefficients for each conditioning variable in these four component regressions is equal to that variables' coefficient in the overall expenditure per child function? Assume that each regressand in the model depends on income, price, and technology and population composition. (5+3+2)

3. (a) Derive the mathematical expression of Disability Adjusted Life Years (DALYs) assuming the age weighting function is non-linear with age. (b) Develop a suitable formula that makes a relationship between force of mortality and resistance to disease. (5+5)

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4. Show that FGT Index of poverty can capture incidence, depth and severity of poverty. Is Human Poverty Index $[P(\alpha)]$ sub-group decomposable? Give reasons for your answer. 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. (4+3+3)

5. Distinguish between GDI and GEM. Calculate the Gender Development Index(GDI) of country A, following the Modified formulae developed in the year 1999/2000. The parameter of inequality aversion (ϵ) is set at 2. The following information are given in respect of country A, towards calculation of GDI. (2+8)

Population (millions)	Percentage share of population	Life Expectancy at Birth	Literacy Rate (percent)
Total: 13.924			
Females: 7.009	Females:50.3	Females: 56	Females: 64.6
Males: 6.915	Males: 49.7	Males: 53.4	Males: 79
Combined Enrolment Ratio		Percentage share of economically active population (EAP)	
Females: 39.2		Females: 38.3	
Males: 47.6		Males: 61.7	
Ratio of female non-agrl. wage to male non-agrl. wage (W_f/W_m):0.75			
GDP per capita: \$1890(PPP)			

Max. country income: (Real GDP PC): \$PPP40,000

Min. country income: (Real GDP PC): \$PPP100