Master of Arts Examination: 2018(Old)
(M.A 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: 4x2.5

(a) Evaluate GE(0) from Generalized Entropy Class of measure of inequality.   2.5

(b) How do you relate between achievement index (AI) and deprivation index (DI) of any dimension of human development. Show that HDI is scale invariant. (1.5+1)

(c) Prove that the Gini-Coefficient is distribution insensitive.   (2.5)

(d) Show that the growth of income per capita is the sum of three growth rates of average productivity of labour(AP$_L$), work force participation rate(WFPR) and share of working age population(SWP) of a country.   (2.5)

(e) Find the elasticity of substitution between two poverty sub-indices of Human Poverty Index(HPI) developed by Sen and Anand(1997).   (2.5)

(f) How can you assess the comparative claims of more relative equality between male and female achievement against higher absolute achievement?   (2.5)

2 .(a) Consider the following FGT model:

$$FGT\ (\alpha) = \frac{\sum_{Y^* > Y_i} (Y^* - Y_i)^\alpha}{N(Y^*)^\alpha}$$ where, Y^* stands for poverty line income, Y_i be the income of the i-th poor, N stands for total population and n* be the number of total poor. Show that if α tends to infinity, FGT will capture only one person who is the poorest of the poor. (b)What are the properties of Human Poverty Index (HPI) developed by Sen and Anand(1997)   (5+5)

3.Following the simplified version of Basu and Van (1998) model of child labour, explain the possibilities of multiple labour market equilibria conditional on fertility choices of the households in a less developed economy. It follows from the model that high fertility equilibrium is inferior to low fertility equilibrium for each labouring household, but why the households choose high fertility? Examine the relevance of the model in the light of Household Economic Theory of Fertility developed by Chicago-Columbia School.   (5+2+3)

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4.Following the methodology developed by Alkire and Foster (2009) relating to the multidimensional poverty index (MPI) (which was introduced by UNDP in 2010), calculate the HCR, Intensity of Poverty and MPI from the following hypothetical data. Also estimate the contribution of education, health and standard of living in MPI. (2+2+2+4)

Dimension(Indicator)	HH-1 Size:4	HH-2 Size:7	HH-3 Size:5	HH-4 Size:4
Education				
No one has completed six years of schooling	0	1	0	1
At least one school-aged child not enrolled in school	0	1	0	0
Health				
At least one member suffers from malnutrition	0	0	1	0
One or more children have died	1	1	0	1
Living Conditions				
No Electricity	0	1	1	1
No Access to Clean Drinking Water	0	0	1	0
No Access to Adequate Sanitation	0	1	1	0
House has Dirt Floor	0	0	0	0
Household uses Dirty Cooking Fuel	1	1	1	1
Household has no Radio/TV/Phone/Cycle/Bike	0	1	0	1

5.What are the social values incorporated in measuring the DALYs? Assume a female child who contracts poliomyelitis at age 5 and survives next 5 years (after being affected by poliomyelitis) and then dies. Given that the total horizon of time is 87.5 years, disability weight is 0.5 and discount rate is 3%. Find the DALYs lost due to early death following disability of the girl child, given that $\beta=0.04$ and $C=0.16243$. (4+6)