Master of Arts Examination 2019 (OLD)
1st year, 2nd sem
Macroeconomics II

Time: 2 HOURS **Full Marks 30**

Answer any three of the followings.

1. Consider a standard Ramsey model. Suppose the government taxes capital income and remits the proceeds as lump sum transfer. Also, assume that government runs balanced budget. Explain analytically as well as diagrammatically the impact of this kind of government intervention on steady state per capita physical capital and steady state per capita consumption? 10

2. Consider a standard Ramsey model in command economy set up.
(a) Derive Euler equation. Interpret it.
(b) What is the transversality condition? Interpret it.
(c) Using the phase diagram discuss the dynamic behavior of the model. 2+2+1+2+3

3. a) What is the difference between funded and unfunded social security system?

b) Can the economy with any social security system Pareto dominate the competitive equilibrium without social security? Justify your answer using an overlapping generations model.

3+7

4. Consider a basic Real Business Cycle model. The production function of the economy is given by

$$Y_t = K_t^{\alpha}(A_t L_t)^{1-\alpha}, 0 < \alpha < 1$$

Output is divided between consumption and investment.
Assuming full depreciation, the capital stock in period t + 1 is given by

$$K_{t+1} = Y_t - C_t$$

Technology At is subject to random disturbances.

$$\ln A_t = \bar{A} + gt + \widetilde{A_t}$$

Where $\widetilde{A_t}$ is the random component of $\ln A_t$.

The representative household maximizes the expected value of the present discounted value of utility given by $U = \sum_{t=0}^{\infty} e^{-\rho t}(lnc_t + b\ln(1 - l_t))\frac{N_t}{H}$

where b > 0 and Nt is the population and H is the number of households. Population grows exogenously at rate n. In this model, if the random component of log technology follows first order autoregressive process, show that the departure of log output from its normal path follows a second order autoregressive process. 10