

ECO 401 Assignment 3

To be submitted online on Blackboard by 9 am on Friday April 22, 2022

Total marks: 25. The marks allotted to each question is indicated in the square brackets alongside.

1. There are 100 individuals who want to travel from A to B . Route 1 always takes 40 minutes. The time taken on route 2 is $10 + N$, where N denotes the number of people on route 2. Each individual decides the travel route for him/her-self. Describe the outcome in terms of the number of people along each route. Also verify and clearly explain the efficiency/inefficiency of this outcome, where efficiency is evaluated in terms of total travel time. [12.5]

2. Consider a situation involving two individuals, namely A and B . Each individual has a money income of $M = 100$, and the utility function of each individual is given by $u(x, G) = \ln(G) + x$, where $\ln(\cdot)$ is the natural logarithm function, G denotes the units of a public good, and x denotes the amount of money left for consumption of all other goods (i.e. apart from the public good). The price of the public good is unity. Suppose that the public good may be purchased individually, but once purchased, the benefit of the total amount of public good available accrues to everyone, irrespective of who all have purchased the good. Also suppose that individual A purchases the public good by maximising his/her utility subject to the budget constraint; while making this choice, he/she ignores what individual B might do. On the other hand, individual B chooses the amount of public good after observing the amount of public good purchased by individual A ; individual B also maximises utility subject to his/her budget constraint. Find out the market outcome corresponding to this situation. Also, verify and clearly explain the efficiency/inefficiency of this outcome. [12.5]