**NRU HSE-2020, Microeconomics Class-03**

# Consumer theory: in-kind income

**1.** A consumer is paid each week 2 units of good X and 6 units of good Y. These units could be consumed or traded at market prices and both goods are infinitely divisible. In the first week he consumed 4 units of good X and 5 units of good Y. In the second week the prices were different and he consumed 5 units of good X and 3 units of good Y.

**(a)** Find the market prices for each week.

**(b)** In which week is the consumer better off?

**(c)** Is good X an inferior good for this consumer?

**(d)** Is good X a Giffen good for this consumer?

**2.** Consider a two-period intertemporal choice model. Assume that consumption is a normal good in every period.

**(a)** Danhas utility function , where  is his consumption in period  . His income in period 1 is 5 times larger than his income in period 2. At what interest rate will he choose to consume the same amount in period 1 as in period 2?

**(b)** As the rate of interest increases, a net lender might lend less but never becomes a borrower. True or false? Explain.

**(c)** Suppose a person responds to increases in the interest rate by first increasing saving from  to and then (with further increases) reducing saving to , where . Is he necessarily irrational?

**3.** Bill’s utility function is  where  is a composite good with price equal to 1 and is leisure. He earns  per hour and owns  units of the composite good and his time endowment is .

**(a)** Find his reservation wage.

**(b)** Derive Bill’s demand for leisure (ordinary demand), illustrate graphically the resulting labour supply curve and explain its slope.