# MASTER OF ARTS EXAMINATION, 2019

( 2nd Year, 3rd Semester )

## ECONOMICS

## RESOURCES ECONOMICS

Time : Two hours                                            Full Marks : 30

### Answer any *three*

1. What do you mean by stock of Exhaustible Resources ? Given a linear demand curve show that as the number of firms increases in the industry for extracting an exhaustible resource, the exhaustion time decreases .  What will be the impact on exhaustion time T ,irrespective of number of firms in such case,  if there is

   (i)     An increase in discount rate
   (ii)    An increase in initial stock
   (iii)   A  decrease in the price of backstop  .                          2+5+3=10

2. What makes a Renewable Resource different  from  an  Exhaustible Resource? Given a density dependent growth function,  explain Carrying Capacity and Biological Optimum. Show that without human intervention stock  of  renewable  resource  is  limited  to its carrying capacity. Discuss one from of human intervention and the corresponding economic optimum with such growth function.
                                                                          1+2+4+3=10

3. Assume that N identical fishing firms are catching fish in a common property like deep sea. Derive the fundamental equation of Free Access Market equilibrium.  In what sense, there will be overexploitaion of  common property resource ? Discuss any two methods of avoiding the extinction of  rare species or tragedy of the commons.                          4+2+4=10

4.

   Discuss the Faustmann Rule in the context of Commercial Forestry for a Single Rotation and Multiperiod Rotation. What will be the likely impact on optimum cutting and felling time ( length of rotation ) of an increase in rate of interest, price of timber and planting cost ?( Explain considering a multiperiod rotation )                                   2+5+3=10



                              Or,


   Show that if Forestry offers environmental amenities other than timber, the social optimum and private optimum rotation time will be different.
   Discuss critically the resons for this.                              8+2=10




.5.    Show how Solow –Hartwick investment rule of natural capital can maintain intergererational

       equity of per capita consumption . Discuss with all assumptions and efficiency conditions ?    10