

Internal Assessment 2
ECON03SEC1
Regular and Backlog
Full Marks: 50
28 Nov 2023

Answer the following questions using Excel: $[10 \times 5 = 50]$

1. Which specie has the longest and the widest petal in the `iris.xlsx` data?
2. What is the average displacement of a manual car with 4 cylinders in the `mtcars.xlsx` dataset?
3. Calculate the mean *mpg* (miles per gallon) of the cars with 6 and 4 cylinders in `mtcars.xlsx` dataset?
4. How many years of data are available for each country in the `GDP.xlsx` dataset? How many countries do not have data for all the years?
5. In the file `GDP.xlsx` how many countries do not have data on GDP?
6. Rank (without ties) the countries according to the Gross Domestic Product (GDP) in the `GDP.xlsx` dataset.
7. How does the number of cylinders `cyl` affect the mileage `mpg` for a given horsepower `hp`? Calculate the partial correlation in the `mtcars.xlsx` dataset.
8. How many missing values are there in total in the `GDP.xlsx` dataset? Find how many countries are listed in the data without using the filter option?
9. Using the data `GDP.xlsx`, for any two countries plot separate line charts for the components of GDP (Household Consumption Expenditure, Government final consumption expenditure, Net exports and Gross Capital formation).
10. Suppose that the firm's production function is $Q = F(K, L) = 50K^{0.5}L^{0.5}$. Suppose, too, that the price of labour $w=5$ and the price of capital $r=20$. What is the cost minimising input bundle if the firm wants to produce 1,000 units per year?