Course: ECO423A
First Assignment

***Instructions*:**

1. Refer Chapter 2 of the Van Der Wijst
2. Total Marks: 20
3. Last date of submission: 5th June 2017 by midnight
4. There is a step marking but only in reasonable cases
5. Submit it in softcopy form

All questions are compulsory:

1. Suppose you have $500,000 and you want to spend the money in equal amounts over the next 5 or 10 years. Your plan is to deposit the money at a bank and withdraw it in a series of either 5 or 10 equal annual amounts. Calculate how much money you can withdraw each year in both alternatives (5 or 10 years). Assume that the first withdrawal will take place one year from now and that the annual interest rate is 6%.

2. Your gymkhana club needs to replace the major sports instruments after every seventh year. To pay for the operation the club organizes a fancy fair every year, starting now. Replacement of instruments cost Rs. 35000 and the interest rate is 7%. How much does the fancy fair have to bring in each year to produce the necessary Rs. 35000 in seven years.

3. Suppose a businessman want to start a college fund to pay for the studies of his daughter, who was born today. He has calculated that the studies will cost Rs. 25000 per year for 4 years and the first amount has to be available on his daughter's 18th birthday. He wants to fill the fund by paying an equal amount into the fund every year on his daughter's birthdays, the first payment today and the last one on her 18th birthday. The interest rate is 6% per year. How large must each of the businessman's payments be to fill the fund?

4. This is from the example that we discussed in class. Suppose ZX Co has developed technology that allows it to launch a new product. If the product is launched in the standard version, it can be upgraded gradually over the years and it will generate a cash flow of $ 50 million per year over the next 10 years. The risk adjusted discount rate for cash flows from this safe conservative strategy is 8%. ZX Co's technology also allows it to launch an upgraded version at once. The technological advantage will double the annual cash flow to $ 100 million per year, but it will also trigger fierce competition that will limit the products life span to 5 years. This strategy is

considered much riskier, the risk adjusted discount rate for cash flows from this aggressive strategy is 12.5%. Both strategies require an investment of $ 300 million today. Assume that all cash flows occur at year-end and start one year from now.

a. Which strategy should ZX Co choose?

b. Use the spreadsheet to calculate the internal rate of returns for both projects

c. Can you rethink of a situation involving two mutually exclusive projects where the IRR leads to the wrong choice?

5. In the financial representation of investment projects, we replace the yearly depreciation with investment outlays(s). But depreciation still influences projects' cash flows, can you explain in what way?