Finance Assignment 1- Time Value of Money

Q.1. Suppose after many struggles you successfully secure a job from the campus. However, your experiences at IITK have made you realise that there are far more important things in life than minting money . You want to plan an early retirement (already). You talk to a few people and figure out that you would need atleast a saving of €30,000 if you want to retire after 20 years. How much do you have to deposit annually into a fixed deposit earning 7% annually?

Q,2. Pete considers buying a house. Currently, he rents a place for €1,000 a month. The current monthly interest rate on mortgages is 0.5%. His planning period is 20 years. If he doesn't want to increase his housing costs, what amount of mortgage is available for his purchase?

Q.3. TATAMOTORS has just paid a dividend per share of rupees 20. Shares are valued only on the basis of expected dividends. An annual sustainable growth of dividends of 3% is assumed. The appropriate discount rate (i) is 8% per year. The planning horizon is limited to 20 years. Compute the share value.

Q.4. Compute the share value of a company paying a dividend of rupees 100 per year over infinite maturity(perpetuity), with expected growth of five percent. The discount rate is assumed to be 12% yearly. The first dividend is paid next year.

Q.5. A company buys a piece of equipment for €2 million on January 1. The expected useful life is 6 years and the salvage value is estimated zero. The company intends to replace the equipment identically. The average expected price increase is 8% yearly. For this purpose, the company creates a special fund with annual equal payments at the end of each year during the lifetime. Cost of capital and earnings of the fund (i) is 10% per year. Compute the annual payment into the fund.

Q.5. Compute the quarterly interest rate concerning an effective annual rate of 12% and a nominal annual rate of 12%.