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Q1. (a) Ali deposited $2000 in a savings account. The annual interest rate is 8 percent, compounded semiannually. How many years will it take for his money to grow to $4765? (5 marks)

Ans: **given date**

PV= 2000

K= 8% =8/2 = 4%

FV= 4765

N= ?

**Solution:**

PV = FV x (PVIFk, n)

2000 = 4765 x (PVIF 4% ,n)

2000/4765 = PVIF 4%, n

0.4197271773 = PVIF x 4%, n

By checking 0.41972 in present values tables under 4% we get.

0.419 = 0.42

N = 22 years

Q1. (b) A payment of $100 per year forever is made with a discount rate of 10 percent. What is the present value of these payments? (5 marks)

Ans;

**Given data:**

PMT = 100

I = 01

PVP = ?

**Solution:**

Using the formula

PVP = PMT x 1/i

Putting the values we get

PVP = 100 x 1/0.1

PVP = 100 x 10

PVP = 1000 ANSWER

Q2. (a)Briefly explain the difference between real rate of interest and nominal interest rate with an example. (5 marks)

Ans; **real interest rate:**

The real interest rate is the rate of interest an investor, lender or saver receives after allowing for inflation.

**Example:** the bank offers 10% interest in which the 5% is the inflation and if we subtract 5% from that 10% so we get real interest rate which is 5%.

2) **Nominal interest rate:**

it is the interest rate before taking the inflation in account. Nominal can also refer to the advertised or stated interest rate on a loan without taking any fees or compounding of interest.

**Example:**

If one go to bank and he has 1 lac cash and he seek interest on it from the bank.

The bank offers 10% interest so the interest which the bank is offering is the nominal interest rate.

(b) Being an investor which market will you prefer, security exchanges or over-the-counter market? And why? (5 marks)

Ans: being an investor I would prefer ovr-the-counter market because over-the-counter is a decentralized dealer market where brokers and dealers transact directly with the help of computer and mobile phones. You can simply withdraw your money. It reduces transportation cost as well as physically goes to location. It is done electronically. In over-the-counter the short selling stocks are risky.

Q3. (a) Calculate the present valve of $40,000 to be received fifteen years from now at an annual discount rate of 10 percent. (5 marks)

Ans:

**Given data:**

FV = 40000

N = 15

K = 0.1

PV = ?

**Solution:**

Using the formula

PV FV/(1+K)n

By putting the values we get

PV = 40000/(1+.4)15

PV = 40000/4.17724819

PV = 9575.6819757 (ANSWER)

(b) Give two daily life examples of ordinary annuity and annuity due and briefly explain why they are been categorized as either. (5 marks)

**Example of ordinary annuity:**

1. Dividend payments: the payments which are made at each quarters.
2. Income annuity: such as the lifetime annuity noted above which also typically make payments at the end of each month.

**Examples of annuity due:**

1. Rent being paid at the beginning of each month is the example of annuity due.
2. Utility bills such electricity bills, telephone bills, Gas bills, water bills etc are annuities due because the beneficiary must pay at the beginning of the billing month.