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# IQRA NATIONAL UNIVERSITY

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<b>Subject:</b>	<b>Business Finance</b>
<b>Semester:</b>	<b>4<sup>th</sup></b>
<b>Submitted to:</b>	<b>Ms. Marium Saleem</b>
<b>Exam:</b>	<b>Midterm</b>

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**IQRA NATIONAL UNIVERSITY**  
**(Dept. of Business Administration)**

**Course Title: Business Finance**

**Instructor: Ms. Marium Saleem**

**Total marks= 30**

**Attempt ALL the questions. Solve the questions in MS word and then upload the document on SIC as an assignment.**

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**Q1. (a):** Ali deposited \$2000 in a savings account. The annual interest rate is 8 percent, compounded semi-annually. How many years will it take for his money to grow to \$4765?

**Ans1. (a):** (5)

$$PV = \$2000$$

$$FV = \$4765$$

$$K = 8\% \Rightarrow 0.08$$

$$n = ?$$

As interested rate is compounded semi-annually, then  $8\%/2$

So, it will be  $k = 4\%$

Now substituting into our formula, we have:

$$PV = FV \times (PVIF\ k, n)$$

$$2000 = 4765 \times PVIF \times 4\%, n$$

$$2000/4765 = PVIF \times 4\%, n$$

$$0.419727 = PVIF \times 4\%, n$$

SO, checking 0.419727 this value in the table under the 4%,

$$n = 22$$

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**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)

**Ans1. (b):**

$$PMT = 100$$

$$K = 10\% \Rightarrow 0.1$$

$$PV = ?$$

Now substituting into our formula, we have:

$$PVP = 100 \times 1/0.1$$

$$PVP = 100 \times 10$$

$$PVP = 1000$$

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

**Ans2. (a): Nominal interest rate:** The nominal interest rate (or money interest rate) is the percentage increase in money you pay the lender for the use of the money you borrowed. The nominal interest rate doesn't take inflation into account.

**EXAMPLE:** Ali borrowed Rs.100 from Allied bank one year ago at 8% interest on bank loan. When Ali repay the loan, Ali must repay the Rs.100 Ali borrowed plus Rs.8 in interest—a total of Rs.108

**Real Rate of Interest:** The real interest rate measures the percentage increase in purchasing power the lender receives when the borrower repays the loan with interest. The real rate of interest leads to the concept of the inflation adjusted, interest rate.

**EXAMPLE:** Ali earned 8% or Rs.8 on the Rs.100 loan. However, because inflation was 5% over the same time period, Ali actually earned only 3% in real purchasing power or Rs.3 on the Rs.100 loan.

**Key Difference Between Real rate of interest and Nominal interest rate:**

- the real interest rate is the nominal interest rate adjusted for inflation while the nominal interest rate is the advertised interest rate and is not adjusted for inflation.
- The real interest rate is the rate of increase in purchasing power from undertaking an investment while the nominal interest rate is the rate of increase in the number of dollars from undertaking an investment.
- A 5% real interest rate tell us that, after one year, we can buy 5% more goods and services while A 5% nominal interest rate tell us that, after one year, we will have 5% more Rs in our account but it doesn't tell us how many more goods those Rs can buy.

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**Q2. (b):** Being an investor which market will you prefer, security exchanges or over-the-counter market? And why? (5)

**Ans2. (b):** I will prefer security exchange market because of the listed below benefits.

**Security exchange market:** is an organized market for buying and selling of financial instrument known as stock exchange which includes stocks, bonds, options and futures. It is an organized market where securities are bought and sold.

**Some of the key considerations and benefits are listed below:**

1. **Easy access to long term and new capital:** on going public, it enables the company to raise a long term capital by issuing securities to the public. Going public provides access to various individuals who in aggregate have a significant amount of funds to invest.
2. **Creating a market for the company's shares:** Public companies offer the investing public including institutional investors and pension funds, an attractive avenue for investment by virtue of liquidity of issued securities.
3. **Providing the company with an opportunity to implement share option schemes for their employees:** the ability of companies to offer share options and employees share ownership schemes is a key advantage of the public companies.
4. **Freedom to diversify investment:** by going public, existing shareholders are placed in the position to diversify their investment.
5. **Transferability of shares:** shares in the public companies are freely transferable.
6. **Realization of investment:** a key benefit from going public is the ability to establish a market value of shares thereby enhancing the ability to trade in the shares.

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

**Ans3. (a):**

$$FV = 40,000$$

$$K = 10\% \Rightarrow 0.1$$

$$n = 15 \text{ YEARS}$$

$$PV = ?$$

Now substituting into our formula, we have:

$$PV = FV \times 1 / (1+k)^n$$

$$PV = 40,000 \times 1 / (1+0.1)^{15}$$

$$PV = 40,000 / (1.1)^{15}$$

$$PV = 40,000/4.17724$$

$$PV = 9575.700702$$

$$PV = \text{Rs. } 9576.$$

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**Q3. (b):** Give two daily life examples of ordinary annuity and annuity due and briefly explain why they are being categorized as either. (5)

**Ans3. (b):**

With an ordinary annuity, payments are made at the end of a covered term. Ordinary annuity payments are usually made monthly, quarterly, semi-annually, or annually on the other hand annuity due, payments are made immediately, or at the beginning of a covered term rather than at the end. A rent or lease agreement is a common example of an annuity due.

**Examples:**

1. Consistent quarterly stock dividends are one example of an ordinary annuity; monthly rent is an example of an annuity due.
2. If an ordinary annuity pays Rs. 50,000 per year for five years and the interest rate is 7%, the present value would be

$$\text{Present Value} = \text{Rs. } 50,000 \times ((1 - (1 + 0.07)^{-5}) / 0.07)$$

$$\text{Present Value} = \text{Rs. } 205,010$$

If the annuity in the above example was instead an annuity due, its present value would be calculated as

$$\text{Present Value of Annuity Due} = \text{Rs. } 50,000 + \text{Rs. } 50,000 \times ((1 - (1 + 0.07)^{-(5-1)}) / 0.07)$$

$$\text{Present Value of Annuity Due} = \text{Rs. } 219,360.$$