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IQRA NATIONAL UNIVERSITY

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**Submitted to: Ms. Marium Saleem**

**Exam: Midterm**

**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.**

**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?

**Ans. (a):** (5)

PV= $2000

FV= $4765

K =8% => 0.08

n=?

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

So, it will be k= 4%

SOLUTION: FORMULA,

PV = FV X (PVIF k, n)

2000 = 4765 X PVIF X 4%, n

2000/4765 = PVIF X 4%, n

0.419727 = PVIF X 4%, n

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

n = 22

**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)

**Ans:**

PMT = 100

K = 10% => 0.1

PV =?

PUTTING THE VALUES IN FORMULA

PVP = 100 X 1/0.1

PVP = 100 X 10

PVP = 1000

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

**Ans: Real Rate of Interest:** lenders of money must postpone during the time the money is loaned, lenders, then lose the opportunity to invest their money for that period of time to compensate for the cost of losing investment opportunity while they postpone their spending lenders demand borrowers pay. A basic rate of return the real rate of interest. The real rate of interest Does not include adjustments for any other factors such as the risk of not getting paid back.

**EXAMPLE**: assume u have a 20,000 with real rate of interest is 4% the loan is repayable over a 5year period and equal instalment. Your payment would work out to be 362.33per month over 60months in the first month the interest payable on the full 20,000 loan amount is 66.67, which means that principle repayment is 301.66 at the end of the first month the principal amount is 19698.67 and so on by the end of 60monts the loan amount outstanding will be zero

**Nominal rate of interest:** the interest rate that we have built so far, containing the real rate of interest and a premium to cover expected inflation, is 2-1is called this because it does not include any premium for the uncertainties associated with borrowing or landing. The yield on short term US treasury bills is often used has a proxy for the risk free rate because the degree uncertainty associated with these securities is very small

**EXAMPLE:** Let us assume that the real interest rate of investment is 3% and the inflation rate is 2% calculate the nominal rate of interest therefor it can be calculating using the formula

**Nominal interest rate formula**

**= [(1**+3%)\*(1+2%)]-1

=5.06%

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

**Ans. (b): Over-the-counter market:**

It is an instrument that is used for hedging, risk transfer, speculation and leverage.

Over-The-Counter market gives exposure to different markets as an investment avenue.

In many cases it implies less financial burden and administrative cost for the end users (e.g. corporate)

* These derivatives offer companies more flexibility because, unlike the “standardised” exchange-traded products, they can be tailored to fit specific needs, such as the effects of a particular exchange rate or commodity price over a given period.
* Companies say such derivatives play a big part in helping them to provide consumers with stable prices

**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)

**Ans. (a):**

FV = 40,000

K = 10% => 0.1

n =15 YEARS

PV=?

SOLUTION: FORMULA

PV = FV X 1 / (1+k) ^n

PV = 40,000 X 1 / (1+0.1) ^ 15

PV = 40,000 / (1.1) ^ 15

PV = 40,000/4.17724

PV = 9575.700702

PV = $9576.

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

**Ans. (b):**

**Ordinary Annuity:**

**Example:**  Faris decides to set aside $50 at the end of each month for his child’s college education. If the child were to be born today, how much will be available for its college education when he turns 19 years old? Assume an interest rate of 5% compounded monthly.

**Solution:**

First, we assign all the terms:

R= $50

i= 0.05/12 or 0.004166

n= 18 x 12, or 216

Now substituting into our formula,

R[(1+i)^n-1]

S n = ——————-

i

$50[(1+0.05/12)^216 -1]

S n = ——————————–

0.05 / 12

S n = $50(349.2020206)

S n = $17,460.10

**Examples of Annuity Due Situations:**

An annuity due may arise due to any recurring obligation. Many monthly bills, such as rent, mortgages, car payments, and cell phone payments are annuities due because the beneficiary must pay at the beginning of the billing period. Insurance expenses are typically annuities due as the insurer requires payment at the start of each coverage period. Annuity due situations also typically arise relating to saving for retirement or putting money aside for a specific purpose.