Khwopa Engineering College
Computer Department
Engineering Economics
Assignment 1

Solve All questions with possible Cash flow diagram.

1.	If the interest rate on an account is 11.5% compounded yearly, approximately how many years will it take to triple the amount? (A) 8 years (B) 9 years (C) 10 years (D) 11 years
2.	Fifteen years ago $1000 was deposited in a bank account, and today it is worth $2370. The bank pays interest semi-annually. What was the nominal annual interest rate paid on this account? (A) 2.9% (B) 4.4% (C) 5.0% (D) 5.8%
3.	Mr. Jones plans to deposit $500 at the end of each month for 10 years at 12% annual interest, compounded monthly. The amount that will be available in two years is (A) $13,000 (B) $13,500 (C) $14,000 (D) $14,500
4.	The purchase price of a car is $25,000. Mr. Smith makes a down payment of $5000 and borrows the balance from a bank at 6% annual interest, compounded monthly for five years. Calculate the nearest value of the required monthly payments to pay off the loan. (A) $350 (B) $400 (C) $450 (D) $500
5.	A piece of machinery can be bought for $10,000 cash or for $2000 down and payments of $750 per year for 15 years. What is the annual interest rate for the time payments? (A) 1.51% (B) 4.61% (C) 7.71% (D) 12.0%
6.	You have borrowed $5000 and must pay it off in five equal annual payments. Your annual interest rate is 10%. How much interest will you pay in the first two years? (A) $855 (B) $868 (C) $875 (D) $918
7.	A company puts $25,000 down and will pay $5000 every year for the life of a machine (10 years). If the salvage value is zero and the interest rate is 10% compounded annually, what is the present value of the machine? (A) $55,700 (B) $61,400 (C) $75,500 (D) $82,500
8.	You borrow $3500 for one year from a friend at an interest rate of 1.5% per month instead of taking a loan from a bank at a rate of 18% per year. Compare how much money you will save or lose on the transaction. (A) You will pay $55 more than if you borrowed from the bank. (B) You will pay $630 more than if you borrowed from the bank. (C) You will pay $685 more than if you borrowed from the bank. (D) You will save $55 by borrowing from your friend.
9.	If you invest $25,000 at 8% interest compounded annually, approximately how much money will be in the account at the end of 10 years? (A) $31,000 (B) $46,000 (C) $54,000 (D) $75,000
10.	A college student borrows $10,000 today at 10% interest compounded annually. Four years later, the student makes the first repayment of $3000. Approximately how much money will the student still owe on the loan after the first payment? (A) $7700 (B) $8300 (C) $11,000 (D) $11,700

11.	A 40-year-old consulting engineer wants to set up a retirement fund to be used starting at age 65. $20,000 is invested now at 6% compounded annually. Approximately how much money will be in the fund at retirement? (A) $84,000 (B) $86,000 (C) $88,000 (D) $92,000
12.	The maintenance cost for a car this year is expected to be $500. The cost will increase $50 each year for the subsequent 9 years. The interest is 8% compounded annually. What is the approximate present worth of maintenance for the car over the full 10 years? (A) $4300 (B) $4700 (C) $5300 (D) $5500
13.	A house is expected to have a maintenance cost of $1000 tlie first year. It is believed that the maintenance cost will increase $500 per year. The interest rate is 6% compounded annually. Over a 10-year period, what will be the approximate effective annual maintenance cost? (A) $1900 (B) $3000 (C) $3500 (D) $3800
14.	You deposited $10,000 in a savings account five years ago. The account has earned 5.25% interest compounded continuously since then. How much money is in the account today? (A) $12,800 (B) $12,900 (C) $13,000 (D) $13,600
15.	A young engineer wants to surprise her husband with a European vacation for their tenth anniversary, which is five years away. She determines that the trip will cost $5000. Assuming an interest rate of 5.50% compounded daily, approximately how much money does she need to deposit today for the trip? (A) $3790 (B) $3800 (C) $3880 (D) $3930
16.	A young woman plans to retire in 30 years. She intends to contribute the same amount of money each year to her retirement fund. The fund earns 10% compounded annually. She would like to withdraw $ 100,000 each year for 20 years, starting 1 year after the last contribution is made. Approximately how much money should she contribute to her retirement fund each year? (A) $ 490 (B) $570 (C) $5200 (D) $11,000
17.	A deposit of $1000 is made in a bank account that pays 8% interest compounded annually. Approximately how much money will be in the account after 10 years? (A) $1890 (B) $2000 (C) $2160 (D) $2240
18.	A deposit of $1000 is made in a bank account that pays 24% interest per year compounded quarterly. Approximately how much money will be in the account after 10 years? (A) $7000 (B) $7200 (C) $8600 (D) $10,000
19.	A machine costs $20,000 today and has an estimated scrap cash value of $2000 after eight years. Inflation is 8% per year. The effective annual interest rate earned on money invested is 6%. How much money needs to be set aside each year to replace the machine with an identical model eight years from now? (A) $2970 (B) $3000 (C) $3290 (D) $3540
20.	At what rate of annual interest will an investment quadruple itself in 12 years? (A) 10.1% (B) 11.2% (C) 12.2% (D) 13.1%