

Time : 30 minutes

**Question 1**

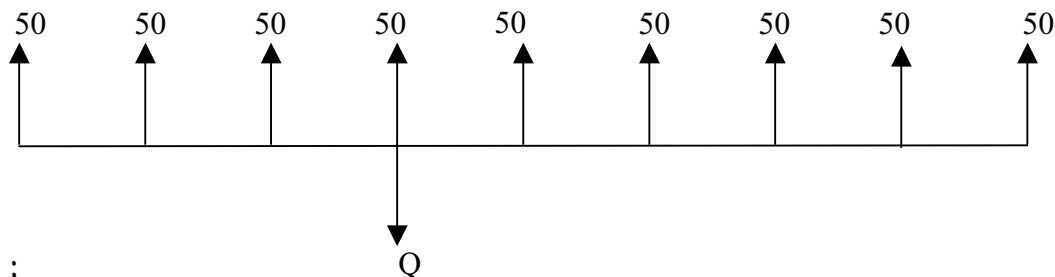
Use tables to evaluate the following factors :

1-  $(P / G, 10\% , 20) \approx 55.41$

2-  $(G / F, 12\% , 20) \approx 0.0023$

**Question 2**

For  $i = 10\%$  , write the equation that calculates the value of Q in the figure below :



Sol :

$$Q = 50 * (F / A, 10\% , 4) + 50 * (P / A, 10\% , 5) \approx 421.6$$

**Question 3**

A dealer offers an old car for sale as follows :

Pay 3,000 JD now as a down payment , and 100 JD / month for 6 months.

Assume that your MAR = 6% compounded monthly, and the dealer's MAR = 9% compounded monthly.

( a ) If you decided to buy the car and make a full payment in cash now, how much should you pay ?

( b ) Was it a good decision for you to buy the car in cash money ? Explain why ? Credit is given only for your explanation .

Sol : ( a ) Cash price =  $3000 + 100 * (P / A, \frac{3}{4}\% , 6) \approx 3584.56$

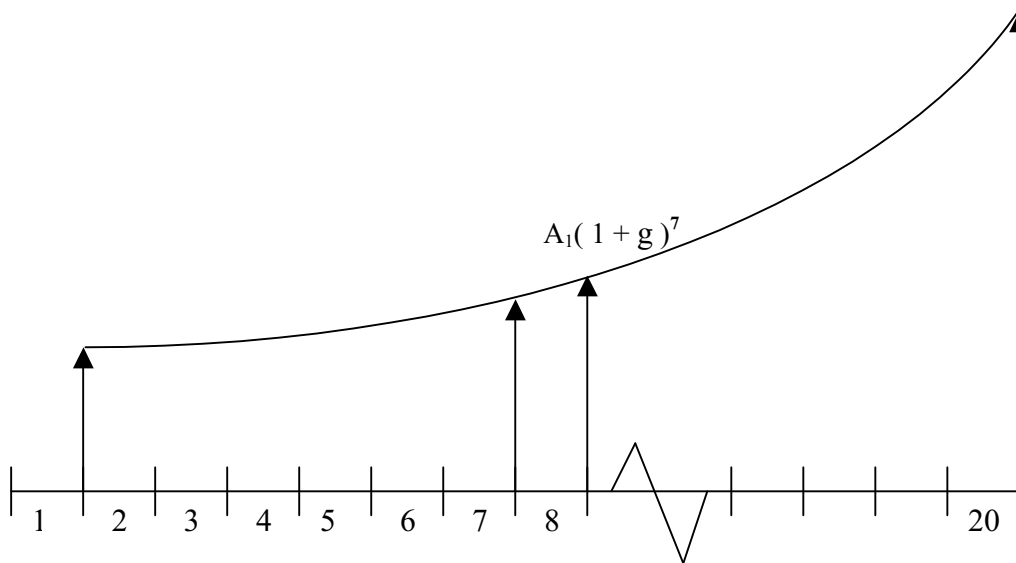
( b ) Worth to you =  $3000 + 100 * (P / A, \frac{1}{2}\% , 6) \approx 3589.64$

since present worth to you > cash price

then, it's a good decision .

#### Question 4

A cash flow series is increasing geometrically at the rate of 8 % per year. The initial payment at  $t = 1$  ( end of year one ) is 5,000 JD, and the last payment is ending at  $t = 20$  ( end of year 20 ). The interest rate in effect is 15 % compounded annually for the first 7 years and 5 % compounded annually for the remaining 13 years. Find the present amount that is equivalent to this cash flow. **( Only write the equation )**.



Sol :

$$P = ( 5000 \div 1.08 ) * ( P/A , g'_1 , 7 ) + 5000 \times (1.08)^7 \div 1.08 * ( P/A , g'_2 , 13 ) * ( P/F , 15\% , 7 )$$

where :  $g'_1 = ( 1.15 \div 1.08 ) - 1$

$$g'_2 = ( 1.05 \div 1.08 ) - 1$$