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**TCET 4140 Telecommunication Network Management**

**Professor Viviana Vladutescu**

**Project 1**

1.Use the factor technique to estimate the cost of installing a local area network in a factory environment having the following characteristics: One large building on a single level will require a total of 3000ft of coaxial (broadband) cable to network its six departments. Six network interface units (NIUs) will be required, and a total of 50 taps will have to be made to connect all the anticipated workstations and programmable devices. Two modems are needed, in addition to one network manager/analyzer that costs $30000. The information necessary to make the estimate may be obtained from the worksheet shown in the table below. How accurate do you think such an estimate would be?

|  |  |  |  |
| --- | --- | --- | --- |
| 1.Interbuilding connections | $100-$150 per foot | X? | =? |
| 2. Intrabuilding connections | $20-$50 per foot | X? | =? |
| 3.Cable installation | $20 per foot | X? | =? |
| 4.Equipment |  |  |  |
| a) Broadband CATV amplifier | $500-$1500 | X? | =? |
|  Taps | $17-$20 each | X? | =? |
|  Splitters  | $5-$15 | X? | =? |
|  NIUs | $500-$1000 per port | X? | =? |
|  Modems | $1000 each | X? | =? |
| b)Basebands |  |  |  |
|  NIUs | $600 per port | X? | =? |
|  Repeaters | $ 1200-$1500 each | X? | =? |
|  Taps/transceivers | $200-$300 | X? | =? |
| c)Network manager | $10000-$30000 |  |  |
|  Network analyzer | $30000 |  |  |

2. If a nominal interest rate of 8% is compounded continuously, determine the unknown quantity in each of the following situations:

a) What uniform end-of-year amount for 10 years is equivalent to $8000 at the end of year 10?

b) What is the present equivalent value of $1000 per year for 12 years?

c) What is the future equivalent at the end of the sixth year of $243 payments made every six months during the sixth year.

d). Find the equivalent lump-sum amount at the end of year nine when P0=$1000 and a nominal interest rate of 8% is compounded continuously.