Seminar 26 (Suggested Solution)

1. i. real salary in 1995 = 8000/1.42 = 5633.80
real salary in 1998 = 9500/1.80 = 5277.77

ii. real increase in salary in 1995 = (5633.80/5000 – 1) x 100% = 12.68%
real increase in salary in 1998 = (5277.77/5000 – 1) x 100% = 5.56%

2. Criteria to determine base period:

i. the base period should be *fairly recent*, since an index number should help people compare present values with past values. If the comparison is to be meaningful, the past (base period) should be recent enough that make people remember its conditions. It is meaningless to tell that prices are 200% above what they were in the Middle age.

ii. Base period should be *a period of normal condition* for the series whose index is sought. If a year of war is chose to be the base year, the consuming pattern may be abnormal in that year.

iii. Select a base period that of *comparability*. For comparisons to be valid, the indexes should have the same base period. e.g. Company A said the index of material cost was 105, company B said that it was 120. the comparison is meaningful unless the base period is the same.

iv. Select a base period that of the *availability of data.* The base period should be a period for which accurate and complete data are available. Sometimes people will choose the census year to be the base year.

3i.

	1992	1993	1994
Product A	12	14	17
Price Index	12/14 x 100 = 85.71	14/14 x 100 = 100	17/14 x 100 = 121.43

3ii.

	1992	1993	1994
Product	Price	Price	Price
A	12	14	17
B	200	189	195
C	51	55	56
Total	263	258	268
Index	263/258 x 100 = 101.94	258/258 x 100 = 100	268/258 x 100 = 103.88

3iii.

	1992			1993			1994		
Product	Price	Quantity	P x Q	Price	Quantity	P x Q	Price	Quantity	P x Q
A	12	100	1200	14	110	1540	17	115	1955
B	200	25	5000	189	30	5670	195	35	6825
C	51	180	9180	55	170	9350	56	150	8400
Total			15380			16560			17180
Index			15380/16560x 100 = 92.87			16560/16560x 100 = 100			17180/16560x 100 = 103.74

4.

Period	1	2	3	4	5	6	7	8	9	10
Price	12	23	32	35	46	59	56	35	46	35
Index	100	192	139	109	131	128	95	63	131	76

5. The chain index is calculated with respect to the immediately preceding time point. This approach must be used *when the basic nature of the commodity* (or the components of the index) *changes over the whole time period*.