FN241 class 11 review questions

Provide precise and concise responses to the following questions referring to theories, concepts, and frameworks as discussed in the class materials and the main textbook. For quantitative problems, demonstrate the process of calculation and clearly highlight your answers as appropriate. Write down your answers clearly so that the lecturer can read them easily.

Review questions

1. Explain the basic defect in the traditional net cost method for determining the cost of life insurance.
   The most glaring defect is that the traditional net cost method did not consider the time value of money. Interest that the policyholder could have earned on the premiums by investing them elsewhere was not considered. As a result, the true cost of insurance was understated.

2. Why is the rate of return on the saving component in most cash-value policies negative during the early years of the policy?
   The negative returns during the early years can be explained by the heavy first-year acquisition and administrative expenses incurred when the policy is first sold. In recognition of the first-year load, cash value policies generally have little or no cash value at the end of the first year, and the cash values are relatively low during the first few years of the policy.

3. Briefly explain the yearly rate-of-return method that policyholders can use to determine the rate of return on the saving component of a cash-value policy.
   The yearly rate of return is based on a formula developed by Joseph M. Belth (see the note/textbook for formula). Based on assumed benchmark prices per $1000 of protection for the various ages, the yearly rate of return on the saving component in a cash value policy can be calculated.

4. Describe the suggestions that consumers should follow when life insurance is purchased.
   The following rules should be followed when shopping for life insurance:
   (a) Determine whether you need life insurance
   (b) Estimate the amount of life insurance needed
   (c) Decide on the best type of insurance for you
   (d) Decide whether you want a policy that pays dividends
   (e) Shop around for a low-cost policy
   (f) Consider the financial strength of the insurer
   (g) Deal with a competent agent

Application questions

1. Tom, age 32, is an accountant. Tom believes that he will have average annual earnings of $80,000 per year up until he retires in 30 years. Roughly 50% of Tom's average annual earnings are used to pay taxes, insurance premiums, and for self-maintenance; with the balance available for family support. Assuming a 6% interest rate, what is Tom's human life value?

   The remaining 50% ($40,000) of Tom's annual earnings will be available for the family. To calculate the human life value, the present value of $40,000 per year for 30 years must be determined, assuming a 6% discount rate. The formula for the PV of an ordinary annuity is:

   Annuity payment x PV annuity factor = PV of the annuity

   $40,000 x 13.7648 = $550,532

   Or you can write a regular equation of DCF which will bring to the same result.

2. Nicole, age 25, is considering the purchase of a $20,000 participating ordinary life insurance policy. The annual premium is $248.60. Projected dividends over the first 20 years are $814. The cash value at the end of 20 years is $4314. If the premiums are invested at 5 percent interest, they will accumulate to $8631 at the end of 20 years. If the dividends are invested at 5 percent interest, they will accumulate to $1163 at the end of 20 years. A $1 deposit at the beginning of each year at 5 percent interest will accumulate to $34.719 at the end of 20 years.

   a. Based on the traditional net cost method, calculate the cost per $1000 per year.

   b. Based on the surrender cost index, calculate the cost per $1000 per year.

   (a) Traditional net cost calculation:

Total premiums for 20 years (20 × 248.60)	$4,972.00
Less dividends for 20 years	–814.00
Net premiums for 20 years	4,158.00
Less cash value after 20 years	4,314.00
Insurance cost for 20 years	–156.00
Net cost per year (–156./20)	–7.80
Net cost per thousand per year (–7.80/20)	**–0.39**

The traditional net cost is negative 39 cents per thousand dollars of coverage per year.

   (b) Surrender cost index calculation:

Future value of the premiums	$8,631.00
Less future value of the dividends	–1,163.00
Net premiums for 20 years	7,468.00
Less cash value after 20 years	–4,314.00
Insurance cost for 20 years	3,154.00
Interest-adjusted cost per year ($3,154.00/34.719)	90.84
Cost per thousand per year (90.84/20)	**4.54**

The surrender cost index is $4.54 per thousand per year.