

# Actuarial Society of India

## EXAMINATIONS

22<sup>nd</sup> November 2005

Subject CA3 – Communications

Time allowed: 2 ½ Hours (02.15\* - 05.00 pm)

Total Marks: 100

### *INSTRUCTIONS TO THE CANDIDATE*

1. *Do not write your name anywhere on the answer scripts. You have only to write your Candidate's Number on each answer script.*
2. *In addition to this paper you should have available Actuarial Tables and an electronic calculator.*
3. *You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have 2 ½ hours to complete the paper.*
4. *You must not start writing your answers until instructed to do so by the Supervisor.*
5. *Attempt BOTH the questions.*

### **Professional Conduct:**

*"It is brought to your notice that in accordance with provisions contained in the Professional Conduct Standards, If any candidate is found copying or involved in any other form of malpractice, during or in connection with the examination, Disciplinary action will be taken against the candidate which may include expulsion or suspension from the membership of ASI."*

Candidates are advised that a reasonable standard of handwriting legibility is expected by the examiners and that candidates may be penalized if undue effort is required by the examiners to interpret scripts.

### *AT THE END OF THE EXAMINATION*

*Hand in BOTH your answer scripts and this question paper to the supervisor.*

**Q.1)**

Your employer, an insurance company is developing both a single premium with-profits bond and a single premium unit-linked bond (with no guarantees). Both bonds have a fixed term of 5 years.

Under the with-profits product the single premium purchases a sum assured equal to the single premium and participates in simple reversionary bonus (there are no terminal bonuses). The unit-linked product has a 1.75% annual management charge (there are no other charges and the payment on death is simply the fund value).

Your CEO has been shown certain illustrated maturity values for a single premium of 100,000 at the standard industry investment rates of 6% and 10% as follows:

	6%	10%
With-profits product	120,000	145,000
Unit-linked product	123,134	148,641

Your CEO is puzzled as the illustrated maturity value for the unit-linked product is higher in both cases and fails to understand why anyone would purchase the with-profits product.

Draft a suitable reply in 400 – 500 words explaining the main features of the products covering the above illustrated values and the death payouts. Your answer should also give the merits of the with-profits product.

**[60]**

**Q.2)**

Your friend has read the following note from a friend who works in the actuarial department of a life insurer and is unable to understand the concepts explained

**“ Net present value**

A common measure used in assessing the profitability of a proposed life insurance product is the net present value of the profit stream.

The basic approach is to project the cash flows under the contract using best estimate assumptions with regard to the future elements of experience. The key parts of the experience includes investment return, mortality and expenses. The resultant cash flows to the shareholder are then discounted.

Under the net present value approach the profits emerging from the product are discounted at a risk discount rate to arrive at the profitability. The risk discount rate is greater than the assumed investment return typically to take account of the risks inherent in profit emergence. Risks would typically include the fact that key assumptions may vary in an adverse manner in reality from that assumed in carrying out the net present value calculation.

The typical profit criterion is to stipulate that the net present value computed above is in excess of a certain benchmark with popular benchmarks being a percentage of premium or a percentage of commission.”

Redraft the note in about 300-400 words to make it suitable for sending it to your friend who is not conversant with financial matters. You can assume that the information contained in the note is correct and that no further information is required.

**[40]**

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