EXAMINATIONS

6 September 2001 (pm)

Subject 201— Communications

Time allowed: 1½ hours

INSTRUCTIONS TO THE CANDIDATE

Write your surname in full, the initials of your other names and your Candidate's Number on the front of the answer booklet.

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet and this question paper.

> *In addition to this paper you should have available Actuarial Tables and an electronic calculator.*

Your employer, an insurance company, is developing a new lump sum investment product with a fixed 5 year term. The amount paid out will be based on the value of a widely used and publicly quoted index. Two options are under consideration.

Option A

After 5 years, this pays out 100% of the amount invested, plus a further 8% of the amount invested for every year that the index at the anniversary exceeds the index at the preceding anniversary by at least 4%.

Option B

After 5 years, this pays out the amount invested increased by the ratio of the index at the maturity date to the index at the start date.

The customer always receives at least the return of their original investment.

A senior manager from your company has written to you. He has calculated that for a £10,000 investment, using your standard company assumption of 5% index growth each year, the amount payable on option A would be £14,000. He has not calculated the amount payable for option B, but has said that it looks to be considerably lower than for option A. He has asked you whether this is correct, and whether he has correctly understood the way that the maturity payments are calculated.

Draft a memo in 500 to 600 words comparing the amounts payable after 5 years for options A and B.

Notes:

- You should not question the reasonableness of the 5% standard company assumption on the rate of index growth over the five year investment period. However, you should make use of the fact that this is an average over the five years, and the rate of growth is likely to fluctuate over time.

- An actuarial student has calculated the following figures rounded to the nearer £50:

Number of years where the index growth exceeds 4%	Example profile of annual growth, based on average of 5%	Maturity amount for Option A	Maturity amount for Option B
1	18%, 2%, 2%, 2%, 2%	£10,800	£12,750
2	8%, 8%, 3%, 3%, 3%	£11,600	£12,750
3	7%, 6%, 6%, 3%, 3%	£12,400	£12,750
4	6%, 6%, 5%, 5%, 3%	£13,200	£12,750
5	5%, 5%, 5%, 5%, 5%	£14,000	£12,750

- You should not consider the surrender values within the 5 year investment period.

- You should not consider the choice of index or technical details of how it is calculated.

- You are not required to discuss how the monies received by the insurance company should be invested.