Actuarial Society of India

EXAMINATIONS

13th June 2005

Subject: SA6 – Investment

Time allowed: Three Hours (10.15* am - 1.30 pm)

INSTRUCTIONS TO THE CANDIDATE

1. ***Do not write your name anywhere on the answer scripts. You have to write only your Candidate Number on every answer script.***

2. ***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 have then three hours to complete the paper.***

3. ***Mark allocations are shown in brackets.***

4. ***You must not start writing your answers in the answer papers until instructed to do so by the Supervisor.***

5. ***Attempt all questions, beginning your answer to each question on a separate sheet.***

6. ***Fasten your answer sheets together in the numerical order of the questions.***

7. ***The answers are expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which are meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However if application specific to any other country is quoted in the answer the same should answer the question with reference to Indian environment.***

8. ***In addition to this paper you should have available Actuarial Tables and your own calculator.***

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."

AT THE END OF THE EXAMINATION

Hand in both your answer script and this question paper to the supervisor

Q.1 Recently you are appointed as an investment manager to "Swadhan Pension Fund". One of the trustees expressed concern about the proportion of equities held in the fund at the time of falling markets and about the proportion held in each market. In particular the following issues were raised:

- The fund still seems to hold a vast proportion in equities when equities are giving dreadful returns.
- The fund held 80% in global equities before the market began to fall, yet holds less than 70% in equities at the most recent actuarial report, this seems to suggest to the trustee that the fund has reduced its equity exposure after the fall.
- The fund currently holds 50 % of its assets in Indian equities, but only 5 % in US equities. The US holding seems small given the relative sizes and performance of the two economies, and given the prospects for the two markets and is smaller than the average pension fund holding in US equities.
- The fund holds 4 % in Japanese equities despite the well documented problems surrounding the Japanese economy. This holding is greater than the average pension fund holding in Japan.

a) Draft a response to the trustees that addresses the concerns raised in each of the four points mentioned above. **[15]**

b) The trustee has spent some time looking through the data provided to her in respect of her own fund and general pension fund data that she found on the internet. The data is as follows:

- The 5 year information ratio for her fund is 0.7
- Last year the 5 year information ratio for her fund was quoted as 0.3
- The investment style of her equity fund is described as "contrarian"
- The investment style of the median manager was be described as "value based".

Explain each of the above information and its utility in the analysis. **[6]**

c) One of the trustees remarked that despite recent falls over the last 25 years investment in venture capital has achieved returns well in excess of the stock market. Hence she suggested that the Board should consider investment in venture capital companies.

Give reasons why venture capital might have given a higher return and also discuss the risks and other issues you would like to take into account before the following her advice.

[6]

d) Another trustee suggested that investment in unquoted shares may also be considered, as this would improve the yield on the portfolio. List the advantages and disadvantages of holding in unquoted shares. Discuss briefly the trustee's suggestion.

[5]

e) Another trustee suggested the following restrictions to have more control on the funds:

i. no asset may be held if it yields less than 4 % pa gross
ii. investment must not be sold at a loss
iii. a holding may not be sold unless it has been held for at least three months

iv. no equity investment may be made in companies with a market capitalization of less than Rs. 20 crore.

Draft a reply to the trustees which briefly considers the rationale for each constraint, any clarification needed and set out the desirability or otherwise of retaining these constraints.

[6]

f)

i) Another trustee suggested that three fund managers be employed , each dealing with different asset classes and geographic areas: fixed income, equity and overseas equity. She has decided to assess the fund managers' performance. Suggest how the performance of each manager's fund can be assessed together with any problems that might be encountered. **[7]**

ii) In case it is decided to adopt passive method instead of active method, list various methods used to construct an index-tracking fund. When might each be used in practice and also briefly discuss the advantages and disadvantages of each method.

[7]

g) One of the trustees suggested that you could approach an investment bank to explore the opportunity of investing in new asset backed securities. He also indicated that now a days many investment banks package a large portfolio of its residential mortgages, securities and sell them to funds that are looking for good quality collateralized lending opportunities offering yields above Government Bonds.

Describe how these types of asset backed securities are typically structured and discuss your concerns in such investments and the principal risks you have as an investor. Pease also mention the safeguards you would like to indicate in the contract to reduce these risks.

[8]
Total [60]

Q.2

a) On January 1, 2005 a NIFTY company has ordinary shares, convertible bonds and preference shares in issue. The details of the various instruments are as follows:

	Net Dividend / Coupon	Price	Par Value
Ordinary share	Rs. 0.12	Rs. 4. 25	--
Convertible loan stock	5.6 % (gross)	Rs. 4. 70	Rs. 5.00
Preference share	6.0 % (net)	Rs. 0.75	Rs. 1.00

The ordinary share has a beta of one and its dividend has been growing at 8 % per annum over the last five years and last declared dividend was Rs. 0.12.

The convertible loan stock will be redeemed on January 2010. The conversion ratio is one ordinary share for each Rs. 5.00 nominal of convertible loan stock. The stock can be converted in

January each year upto and including January 2010. If the convertible is not converted by January 2010, it will be redeemed at par.

The preference share will be redeemed at par in five years time.

A leading marketing intelligence agency predicts that the stock market will rise by an average of 10 % per annum in the foreseeable future.

The investment manager of a charity fund, an authorized investment trust and a life fund wish to invest in the company in question. You may assume that all the three classes of security are suitable for the funds in question.

Analyze the three classes of security to determine which will provide the best investment for each of the managers over a five year period, stating any assumptions you may make. You may use a discount rate of 7 % per annum, which is in vogue at present.

[35]

b) The 8.5 % Government of India Treasury Bill 2013 pays coupons on 7 June and 7 December each year. The clean price of the gilt on 1 August 2003 was Rs. 102. The TB is subject to a sale and repurchase agreement from 1 August to 1 December. Calculate the repurchase price so that the yield on the agreement is 6.5 % per annum annualized. Ignore tax and expenses.

[5]

Total [40]

****