

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

3rd November 2008

Subject SA6 - Investment

Time allowed: Three hours (9.45* - 13.00 Hours)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Please read the instructions on the front page of answer booklet and instructions to examinees sent along with hall ticket carefully and follow without exception
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 then have three hours to complete the paper.
3. You must not start writing your answers in the answer sheet until instructed to do so by the supervisor
4. 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.
5. Attempt all questions, beginning your answer to each question on a separate sheet.
6. Mark allocations are shown in brackets.

AT THE END OF THE EXAMINATION

Please return your answer book and this question paper to the supervisor separately.

Q.1) You are the Chief Investment officer of an Indian general insurance company having predominant business in health insurance followed by fire, marine and liability insurance. The total assets of the company as end March 2008, is Rs. 5000 crore. The following is the distribution of assets.

Domestic equity	35%
Equity in USA	15%
Equity in emerging markets	5%
Domestic Corporate Bonds	15%
GOI securities	25 %
Cash	5%

The year end actuarial report (March 2008) indicates that the liability stood at Rs. 4850 crore, on best estimate basis.

- a. You have been asked to review the investment policy of the company and prepare a brief report to the Board indicating your assessment. (10)
- b. One of the directors indicated the importance of asset liability management and strongly emphasized the need for asset cash flow to match with liability outgo. Explain how you could construct a portfolio of assets to address this issue. (10)
- c. Another director indicated that in the light of recent turmoil in the international markets and also due to the contagion, risk budgeting is to be given due importance. Explain how risk budgeting could be used under various asset strategies. (10)
- d. At present the solvency margin is prescribed as the highest of the following amounts Rs.50 crore or a sum equivalent to 20% of the net premium income or a sum equivalent to 30% of the net incurred claims. The Regulator is asking the views of your company to move towards asset liability based solvency regime so that required solvency margin could be prescribed as 15% of incurred claims and 2% of the excess of liabilities over assets. Describe the likely changes that will result from the new regulatory system, if implemented and how it will affect the way in which you chose your investment assets. What methods you would use to monitor and control the mismatch between the assets and liabilities. (13)
- e. As of now, trading in currency futures is not allowed but, the Regulator is seriously considering allowing non-life companies to trade in currency futures. Explain the basic features of currency futures trade, say between USD and Indian rupee and what steps you will take to mitigate the risk associated. (7)

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- Q.2)** “Rashtriya Bankers’ Association (RBA)” is the association of all commercial banks operating in India. The total staff strength of all commercial banks is about 25 lakhs. RBA is following final salary pension scheme for her members. In her books, she has contributing members, deferred members and retired members who are drawing pension. As of now, the entire pension management is done in-house.
- Describe briefly the factors that the trustees of RBA must take into account when formulating the investment strategy. (6)
 - Explain various risks adjusted investment performance measures that could be used in this context and also indicate the limitations in using them. (6)
 - One of the trustees suggested that the fund should hold a proportion of the assets in index linked gilts, assuming that they are available. Explain briefly what techniques you would use to compare the long term value of index linked gilts to that of conventional GoI bonds . Also explain the relative investment outlook over the next two years for index linked gilts compared to Govt. of India securities. (6)
 - Define the concept of reverse yield gap and give a broad estimate of reverse yield gap for India at the current level and briefly mention the factors that will determine the size the same. (5)
 - Describe briefly the factors responsible for the recent collapse of investment banks in USA and the likely impact on Indian banks. What impact this development could have on the liabilities management of the pension funds. (5)
 - In the latest trustees meeting it has been decided to give the funds to outside fund managers and in this context the following three were short listed. Basic features of the three fund managers are give below:

Item	Manager A	Manager B	Manager C
Ownership pattern	Largest commercial bank in India	Private partnership firm	A multi national pension fund manager
No. of staff	100	50	75
Process followed	Own research	Model driven	Own research and model drives
Decision making	Chief Manager of investment department	General of the Committee	Investment Committee
Discretion available	None	None	Limited
Fee	Fixed salary	Salary + annual	Salary + share of

	package	bonus	profit
Asset managed	Rs. 2000 cr	Rs. 250cr	Rs. 1250 cr.
Number of clients	28	110	75
Fees	Fixed amount	25 basis points	50 basis points

- g. List the principle factors you would recommend to the trustees which they would consider in deciding the manager to be selected. (14)
- h. Assess each manager and indicate what further investigation you would like to undertake so that you could make your recommendations. (8)

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