# INSTITUTE OF ACTUARIES OF INDIA

# EXAMINATIONS

## 19th September 2017

## Subject SA5 – Finance

## Time allowed: Three Hours (14.45* – 18.00 Hours)

## Total Marks: 100

### INSTRUCTIONS TO THE CANDIDATES

1. *Please read the instructions inside the cover 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 you are required 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 is 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 candidate 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.*
7. *Please check if you have received complete Question paper and no page is missing. If so, kindly get a new set of Question paper from the Invigilator.*

**AT THE END OF THE EXAMINATION**

**Please return your answer booklet and this question paper to the supervisor separately. You are not allowed to carry the question paper in any form with you.**

**Q. 1)** A large Asset management company listed on Bharat stock exchange, Bhavishya Fund Company (BFC), is planning to venture into Insurance business. BFC manages about Rs.30000 crores of Equity fund and about Rs. 20,000 crores of Debt fund. The company has free surplus of Rs. 5000 Crores which shareholders have asked the Board to deploy for expansion or explore alternate opportunities. They have hired you as an advisor/consultant for evaluating entry into Life Insurance business primarily writing unit and non-unit linked business. You have to submit a report to the Board of BFC covering various aspects including:

**i)** How does the risk profile of BFC change post launch of Life Insurance Company? (6)

**ii)** What are the factors that the board should consider while evaluating the proposal? (5)

**iii)** What are the options available to the Board to deploy the surplus? (4)

**iv)** **a)** Evaluate the advantages and disadvantages of entering into life insurance business from a shareholder value creation perspective. (6)

**b)** You may give a brief description of the model you may use to evaluate shareholder value including the key factors to be considered. (4)

BFC has launched the Life Insurance business and housed it in a subsidiary and primarily selling term and unit linked products. They have raised a debt of Rs. 500 crores in corporate bond market and are planning to raise additional capital of Rs.300 crores in a couple of years to infuse further capital into the Life Insurance subsidiary.

**v)** What are the advantages and disadvantages of raising debt? Suggest some methods that company can explore to raise additional Rs.300 crores from domestic and international markets. You may assume no restrictions on the regulatory front for this section (6)

**vi)** The Life Insurance Company has not met the planned numbers for the last three years, even though, the fund management business is doing well. The bondholders are wondering if there would be a default due to the underperformance of life insurance business. Suggest what communication you will do to allay the fears of bondholders. (4)

**vii)** The street is valuing the bond at a significant discount factoring in high default probability of the company. Board is keen to understand whether stock prices can be used as a lead indicator to assess market implied default probability

**a)** Explain how equity price is a leading indicator for predicting its default probability and you may consider using Black-Scholes-Merton Model. Your answer should include different components of the model (10)

**b)** How does having an in house model to predict default probability from equity price help BFC's fund management operations? (5)

BFC is worried on adverse reactions from shareholders and is considering de-risking the investment portfolio of its free capital.

**viii)** What are some of things that the company can employ/consider to achieve its objective of de-risking its Shareholders' portfolio. Your answer can ignore any currently applicable regulatory restrictions. (10)

**[60]**

**Q. 2)** Tim-Tim Bearings India Ltd. ("Tim-Tim") is the subsidiary of Tim-Tim Inc. a large US based multinational bearings company and market leader in India. The company is exploring the take-over of a small Indian bearing company – DEF bearings India Ltd ("DEF") either through outright acquisition or through a merger. DEF is a first generation entrepreneur promoted company where the promoter owns 66% of the equity and rest is owned by retail and institutional investors. Both entities are listed on BSE.

**i)** Explain vertical, horizontal and conglomerate mergers and synergies that arise out of it (4)

**ii)** What are the possible reasons why Tim-Tim wants to acquire DEF? (5)

**iii)** Why would DEF promoters want to sell their stake in the company? (5)

**iv)** List five different ways in which Tim-Tim can finance the take-over assuming that the parent company's resources are not available? Explain what factors need to be considered for each option suggested. (10)

**v)** What are the key regulatory responsibilities that Tim-Tim is expected to adhere to in order to ensure that the acquisition gets the regulatory approval. Why do you think such regulatory controls are necessary? (8)

**vi)** You may use the following information for this part of the question:

| DEF – Key financial metrics (Cr) except % and per share data | |
|---|---|
| Sales | 188 |
| EBITDA | 15 |
| PAT | 1 |
| Share Capital | 11.55 |
| Face Value per share | 10 |
| Market Price | 180/share |

| Tim-Tim – Key financial metrics (Cr) except % and per share data | |
|---|---|
| Sales | 1062 |
| EBITDA | 168 |
| PAT | 97 |
| Share Capital | 68 |
| Face Value per share | 10 |
| Market Price | 570 |

Tim-Tim has finally decided for a merger with DEF with a swap ratio of 3 shares of Tim-Tim for 8 shares of DEF. What could be the factors that led to this decision? (8)

**[40]**

******************************