INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

25th June 2019

Subject SP5 – Investment and Finance

Time allowed: 3 Hours 15 Minutes (10.15 – 13.30 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. ***The answers are not expected to be any country or jurisdiction specific. However, if Examples/illustrations are required for any answer, the country or jurisdiction from which they are drawn should be mentioned.***
3. ***Attempt all questions, beginning your answer to each question on a separate sheet.***
4. ***Mark allocations are shown in brackets.***
5. ***Please check if you have received complete Question Paper and no page is missing. If so, kindly get new set of Question Paper from the Invigilator.***

AT THE END OF THE EXAMINATION

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

Q. 1) Describe the principles underlying the legislation and regulation of institutional investment practices for the Trustees of a pension fund dealing with external investment managers. **[8]**

Q. 2) You are the investment manager of a large pension fund that has substantial assets under management and invests a significant proportion of these assets in alternative investments. A sales person from a reinsurance company approaches you regarding the purchase of a Cat-Bond, an insurance linked security, originated by a general insurance company.

i) Explain the process for creating Cat-Bonds using a diagram showing the potential cash flows. (4)

ii) List the key questions regarding Cat-Bond that you would ask the sales person. (3)

iii) Discuss the advantages and risks associated with Cat-Bonds to the general insurance company and the investors. (7)
[14]

Q. 3) Your neighbour, an accountant who just retired, has some amount of money for investment. He is a risk-averse investor with a four-year investment horizon. He is considering few investment alternatives: Corporate Bonds (CBs); Fixed Deposits (FDs) and Fixed Maturity Plans (FMPs).

An FMCG (fast-moving consumer goods) manufacturing company issues CB1 bond; and a Cement producing company issues CB2 bond. Both the bond issues have offered a choice to have annual coupons or a cumulative return option. FD has only one payment of principal and interest combined at maturity. FMPs are close-ended debt funds that have a fixed tenure and invest in instruments whose term is similar to its maturity. The FMP also has only one payment at maturity. The table below summarizes details of the CBs, FD and FMP.

	CB1	CB2	FD	FMP
Term in years	4	4	4	4
Gross Yield p.a.	9%	10%	8%	7%*
Coupon / Interest p.a.	9%	10%	NA	NA
Income Tax	30%	30%	30%	NA
Indexation at 4% p.a.	NA	NA	NA	Yes
Capital Gains Tax	NA	NA	NA	20%
Credit Rating	AA	A	NA	NA**

**indicative yield assumed net of management charges and default risk*

***AAA rating profile of underlying portfolio of bonds*

NA – Not Applicable

He sees the reason for CB1 and CB2 to have different gross yields is difference in the credit ratings. Hence, he wants to understand more about the process of credit ratings.

i) Discuss the approach to credit rating of the two companies by rating agencies. (10)

Upon understanding the credit risk involved, he discards CB2 from his investment universe. He wants to know whether there are any key differences in features of CBs, FDs and FMPs that needs to be considered before making investing choice.

ii) Discuss the key features of CBs, FDs and FMPs. (3)

iii) Stating any assumptions used, suggest your neighbor the most suitable investment among CB1, FD and FMP. (5)

iv) He heard the recent news about FMPs payments were withheld. What would be the potential reasons for the same and in the light of this possibility would your advice to him will change? (3)

[21]

Q. 4) ABC Company is available for trade in cash as well as FnO (Futures and Options) segment of the stock exchange. ABC FnOs are available for term to expiry of one, two and three months.

During an inspection of the facilities of ABC, the industry Regulator issued a warning letter to ABC. On the same day immediately after the news came out on a TV channel, a trader took short position in one lot of future on shares of ABC with a one-month time to expiry.

Within few minutes after the trade, the future traded at 2% below the level of short position took by the trader. For two days, the future continued to trade at around 2% below the level of short position. After two days, the share price of ABC started moving up slowly and in a week's time, the future traded at around 1% above the level of short position.

i) Use Behavioral Finance arguments to explain why the trader holds the future persistently for the week rather than closing out the future earlier either by booking profits in first two days or book modest losses in last few days. (3)

ii) Discuss the steps to mitigate losses where the trader intends to hold the short future until expiry. (4)

[7]

Q. 5) **i)** Describe the following indices:

a) FTSE 100 Index (3)

b) Chicago Board Option Exchange Volatility Index (3)

c) Markit iTraxx Europe Index (3)

ii) A friend of yours wants to invest in equities in an overseas emerging market. He has asked for your suggestion in deciding whether to use local indices of that market or Global index series for researching into the relative merits of investing in different countries. Discuss your suggestion. (6)

[15]

Q. 6) XYZ is a large Life Insurance Company. It offers group superannuation and group gratuity policies to corporate clients. Based on the scheme rules, the product offers benefits in the event of death, withdrawal, retirement or any other exit of the members. Each client has a policy account which represent the balance amount as on that date. The policy account is credited with the premiums paid net of all applicable charges and interest amount. The Company declares the interest rate at the end of each financial year, and it is applied to the policy account on a pro-rata basis. Any payment made to the policyholder is debited from the policy account. The client can also surrender the policy without incurring any surrender charge. The assets are majorly invested in Government securities and Corporate bonds.

i) An investment analyst has suggested that this fund is exposed to risk arising out of increase in bond yields. Comment on this. (4)

ii) Recommend with reasons some product conditions which the Company can add to its product to limit the risk of increase in bond yields. (8)

iii) Express how would you model the asset liability mismatch reserve for the above product. (8)

[20]

Q. 7) You have been appointed as a senior Investment Officer of an investment Company which is going to start its operations soon. Your CEO has assigned you with the task to establish how much investment risk should be taken and where it is most efficient to take the risk in order to maximize the returns once the Company starts operations.

i) Outline the main types of financial risks to which your Company would be exposed to once it starts operations. (5)

ii) Explain the process which you would undertake to complete the assigned task. (8)

iii) Describe the advantages of risk budgeting process. (2)

[15]

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