INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

November 2026

CP1 - Actuarial Practice (Paper A)

Time allowed: 3 Hours 15 Minutes

Total Marks: 100

Q.1) The defined benefits pension scheme is offered by the government for many years. The government is looking to close the existing pension scheme and introduce a new defined contributions pension scheme. The contribution received under the new scheme will be invested in funds selected by the member. The minimum proportion of accumulated value at the time of retirement needs to be used to purchase annuity from annuity providers at the prevailing annuity rates and the remaining proportion can be taken out as lump sum benefit. The existing members will continue to receive the benefit as per the scheme and new contributions from the existing and new members will be part of the new pension scheme.

Discuss the advantages and disadvantages of this change in pension scheme for the government. **[5 Marks]**

Q.2) A country is currently not levying any tax on financial products availed by the individuals. The government wants to raise the tax revenue to manage the fiscal deficit situation.

i) State the different taxes that might be levied on individuals availing financial products. **[3]**

ii) Describe how the technological changes can help to reduce the tax evasion arising from the above tax proposal. **[4]**

[7 Marks]

Q.3) A pension scheme invests in only debt and equity market of the country. The commercial property market of the country and the overseas equity market is witnessing a boom. To take advantage of this opportunity, the trustees have provided the feedback to the fund manager to explore these investment options.

i) Describe the factors that might have led to a boom in commercial property. **[3]**

ii) The residential property market is not witnessing a similar boom. Explain the reason for this variance between residential and commercial property market. **[3]**

iii) Describe the demerits of investing in overseas equity market. **[5]**

iv) The fund manager is looking to increase the cash holdings in the portfolio. Briefly state the reasons for increasing the cash holdings. **[2]**

[13 Marks]

Q.4) A company involved in farming business wants to raise capital to finance the expansion. The company is looking to offer a unique long term bond of 15 years where interest payments will be dependent on the annual rainfall during the year. The principal repayment will also be dependent on average annual rainfall over 15 years with a floor of 100% of initial capital.

i) Describe the factors that needs to be considered in offering this bond. **[10]**

ii) List down the steps involved to achieve an effective risk identification related to above bond offering. **[5]**

[15 Marks]

Q.5) A life insurance company has been writing endowment products for past few years. The company is planning to launch a term assurance product. The company wants to transfer the mortality risk arising from term assurance product using reinsurance.

i) Describe how the company will set the mortality assumption for pricing of this term assurance product. **[5]**

ii) State the reasons for availing the reinsurance. **[2]**

iii) Describe the possible reinsurance arrangements that might be suitable for the company along with the reason. **[5]**

iv) State the risks arising from availing the reinsurance. **[3]**

v) The standard smoker definition used in the industry is someone who has not smoked tobacco product for more than 4 years. The company is evaluating to reduce the smoker definition from 4 years to 2 years. Describe the impact of this change on the mortality assumption used in the pricing. **[5]**

[20 Marks]

Q.6) An individual investor follows an investment strategy with money invested in pre-defined proportion between debt and equity instruments. The asset allocation is rebalanced to the pre-defined proportion at the end of each year. After completion of 3 years, the investor has observed that the returns would have been higher if the assets were not rebalanced at the end of each year.

i) Describe the reasons for underperformance of the portfolio due to rebalancing at the end of each year. **[3]**

ii) The gold prices in the country have been rising and the investor wants to have an exposure to gold. The government has recently introduced gold bonds with term of 10 years. The purchase price and maturity value will be dependent on the prevailing price of gold at the time of purchase and maturity respectively. The government will also make annual coupon payments of 2% p.a. Describe advantages and disadvantages of gold bonds for the investor. **[6]**

iii) The investor wants to invest in private equity. Describe the difficulties in measuring the investment performance of private equity. **[3]**

[12 Marks]

Q.7) State the term whose meaning/definition are provided below:

i) An investment valuation method which considers amount for which an asset could be exchanged or a liability settled between knowledgeable, willing parties at arm's length. **[1]**

ii) The process of establishing how much risk should be chosen and where it is most efficient to take the risk in order to maximise return. **[1]**

iii) The discount rate used to measure the performance of investment at which the present value of inflows is equal to the present value of outflows in a portfolio. **[1]**

iv) The activity, which is not fraudulent or illegal, of taking advantage of inefficiencies in a provider's pricing basis to secure better terms than might otherwise be justified, normally at the expense of the product provider. **[1]**

v) An investment valuation method of obtaining a proxy market value and is calculated by replicating the investment with a combination of other investments and applying the condition that in an efficient market the values must be equal. **[1]**

vi) A type of risk transfer in which the capital is raised to cover the losses from a risk after the risk event has happened. **[1]**

vii) The measure of investment risk which considers the annualised standard deviation of the difference between portfolio return and benchmark return for a passive fund, based on observed relative performance. **[1]**

[7 Marks]

Q.8) A motor insurance company prepares its financial statements and capital requirements on statutory basis. The free assets of the company are expected to keep falling as per the business plan due to the high premium growth over the coming years. Describe the actions that can be taken by the company to manage the capital requirement situation.

[6 Marks]

Q.9) An employer provides defined benefits pension scheme where the benefits are linked to final salary. The scheme has been in place for the past 20 years. The scheme has been experiencing deficit for last 2 years. Describe the possible reasons for this deficit. **[7 Marks]**

Q.10) A life insurance company writes both without-profits endowment and with-profits endowment products.

i) State the factors that will affect the amount of surplus that will be distributed by the company. **[3]**

ii) The with-profits committee of the company determines the level of reversionary and terminal bonus to be declared for each with-profits product every year. Discuss the factors that needs to be considered in determining the level of reversionary and terminal bonus. **[5]**

[8 Marks]

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