

**INSTITUTE OF ACTUARIES OF INDIA**  
**EXAMINATIONS**

**24<sup>th</sup> May 2024**

**SP5 - Investment and Finance**

**Time allowed: 3 Hours 15 Minutes (09.30 - 12.45 Hours)**

**Total Marks: 100**

**Q. 1)**

- i) The central bank of a country provides an indication how it believes the monetary policy is likely to emerge over the short to medium term future. What is this indicative statement generally called as? (1)
  - ii) One of the departments of the Government sues XYZ Tech Ltd for monopolizing digital advertising technologies. Which Government policy this action falls in? (1)
  - iii) Under Trust Law, what is the term used to define an individual who has right to possession, the privilege of use and the power to convey those rights and privileges? (1.5)
  - iv) Which form of regulation is expected to have the fastest response to market needs? (1)
  - v) “When we buy fair trade chocolates, we are casting a vote for the treatment of the laborers around the world who are responsible for the food we eat.” Which objective of ESG represents this the best? (1.5)
  - vi) The English Premier League has introduced a scrutiny of individuals who wish to buy football clubs to ensure it’s being run by a fit and proper individual. Which form of regulation is this? (1.5)
  - vii) Which principle of institutional investment best explains the need that those carrying out financial practice have certain qualifications? (1.5)
  - viii) For which class of investors, the level of expertise maybe a major bottleneck? (1)
- [10]**

**Q. 2)**

- i) CFO of a company believes that there is excess cash available with the company and would like to distribute it as a dividend. However, his team of analysts suggest buying back the company’s shares from the open market instead. Discuss the advantages and disadvantages of both the strategies also keeping into account for the below taxation regime.

Particulars	Tax Rate
Income tax	Slabs between 10% and 45%
Short term capital gains	20%
Long term capital gains	10%

- ii) List other factors that can influence this decision. (2)
- [10]**

**Q. 3)**

- i) HL Ltd is a bank that specializes in providing home loans to individuals. Identify and discuss the five key risks in the bank’s loan portfolio. (7)
- ii) What is liability driven investment (LDI)? (1)
- iii) Discuss the advantages and disadvantages of LDI. (5)
- iv) Give one scenarios each how LDI will mitigate the risk of institutions & individual investors. (2)

**[15]**

**Q. 4)** Your friend who is a new but enthusiastic investor believes that a combination of

- “low price to book value multiple”
- “high dividend payout”
- “low but positive price-earnings” ratio

is the best measure of finding undervalued listed companies across the industries. What caution would you advise your friend while following this approach?

**[10]**

**Q. 5)**

- i) What are the similarities between contract for differences (CFDs) and forward contracts? (2)
- ii) How are CFDs different compared to forward contracts? (4)
- iii) What are the two main “non-market” risk associated with CFDs? (3)

**[9]**

**Q. 6)**

- i) What is an arbitrage fund? (2)
- ii) Discuss some advantages and disadvantages associated with arbitrage funds. (4)

**[6]**

**Q. 7)**

- i) Calculate active money for the below portfolio:

Asset Class	Portfolio	Benchmark
Equity	22%	20%
Corporate Bonds	34%	30%
Govt Bonds	44%	50%

(2)

- ii) Below table of returns is given for a fund portfolio:

Period	Portfolio	Matching Benchmark	Strategic Benchmark
1	-14%	-8%	-5%
2	-5%	0%	5%
3	-8%	7%	9%
4	-12%	-6%	-6%
5	1%	14%	18%
6	-20%	-7%	-7%
7	30%	-4%	1%
8	1%	-6%	-4%
9	-13%	-7%	-3%
10	26%	16%	20%

Calculate:

- a) Strategic Risk (3)
- b) Information Ratio (3)
- iii) Two independent portfolios of bonds both have a probability of 2% of a loss of \$5 million and a probability of 98% of a loss of \$1 million over a 1-year time window
- a) Calculate the expected shortfall at 97.5% for the individual portfolios. (2)
- b) Calculate the expected shortfall for the joint portfolios. (5)
- [15]

**Q. 8)** A fund manager claims to have significantly outperformed the benchmark over the last few years.

- i) Calculate the time & money weighted rate of return for the below portfolio:

Year	Portfolio Value (Rs. Cr)	Cash in/out flow (Rs. Cr)	Benchmark Portfolio
0	156	0	6078
1	121	20	4167
2	134	-43	3475
3	110	52	4039
4	200	0	5060

Assume the cash inflow/outflow happens at the end of the period after portfolio value is reported. (5)

- ii) Comment on the veracity of the fund manager's claim. (2)
- iii) Frame a mechanical trading rule using relative strength analysis. (3)
- [10]

**Q. 9)** Detail some distinctive features of companies in the financial sector. [5]

**Q. 10)**

- i) List one example each of absolute & relative pricing strategies. (2)
- ii) ALM provides more informational value over traditional asset management. Discuss. (3)
- iii)
- a) How is PV01 useful in liability hedging? (2)
- b) Assume that an investor holds a \$5 million (par value) in a 4.5% bond with a McCaulay duration of 2.50 years. The bond is priced at 97.250 per 100 of par value to yield 5.250% on a semi-annual basis. Calculate the DV01 of the bond. (3)
- [10]

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