Chapter Tests of SFM of CA Ashish Lalaji

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SFM Test of Futures

Maximum Marks: 30 | **Time Allowed: 1 hour**

All questions are compulsory

Q 1

(a) Compute the theoretical forward price of the following securities—

	A Ltd.	**B Ltd.**	**D Ltd.**
Spot Price [So]	Rs.4,550	Rs.360	Rs.900
Dividend Expected	Rs.50	Rs.20	Rs.50
Dividend Receivable in	2 Months	3 Months	4 Months
6 Month's Futures	Rs.4600	Rs.390	Rs.920

You may assume a risk-free interest rate of 9% p.a. What action should follow to benefit from futures contract?

Consider following values for your computation:

$e^{0.015}$	$e^{0.045}$	$e^{0.0225}$	$e^{0.003}$
1.015	1.046	1.023	1.030

(6 Marks)

(b) The following data relates to DCB Ltd. share prices:

- Current price per share Rs.170
- Price per share in the futures market - 6 months Rs.175

It is possible to borrow money in the market for securities transactions at the rate of 12 % p.a. Required —

(i) Calculate the theoretical minimum price of 6 month-futures contract.

(ii) Explain if any arbitraging opportunities exist.

Given $e^{0.06} = 1.062$

(6 Marks)

Question Paper prepared by CA. Ashish Lalaji

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Q 2 Fill up the blanks in the following matrix —

Case	Portfolio Value	Existing Beta	Outlook	Activity	Desired Beta	No. of Futures Contracts
M		1.2	Bullish		1.8	90
N	Rs.3,60,00,000			Buy Index Futures	2.3	45
O	Rs.2,00,00,000	1.6			1.2	20
P	Rs.6,40,00,000	1.1	Bullish			48
Q	Rs.2,50,00,000	1.4	Bearish		1	
R	Rs.5,00,00,000		Bearish	Sell Index Futures	1.25	45

S&P index is quoted at 4000 and the lot size is 100.

(6 Marks)

Q 3

(a) Fashion Ltd. manufactures cruiser bikes for export to Americana and Europe. It requires a special type of alloy called "Fecal", which is made up of Iron, Aluminum and Copper. Fecal is sold at Rs.230 per kg in the spot market. Fashion Ltd. has requirement of 6 tons in 6 months time and 6-months Future Contract rate is Rs.2,42,000 per ton. Storage cost is 5 % p.a. and interest rate is 10% p.a. Should the company opt for futures contract?

(6 Marks)

(b) A Rice Trader has planned to sell 22000 kg of Rice after 3 months from now. The spot price of the Rice is Rs.60 per kg and 3 months future on the same is trading at Rs.59 per kg. Size of the contract is 1000 kg. The price is expected to fall as low as Rs.56 per kg, 3 months hence. What the trader can do to mitigate its risk of reduced profit? If he decides to make use of future market, what would be the effective realized price for its sale when after 3 months, spot price is Rs.57 per kg and future contract price for 3 months is Rs.58 per kg?

(6 Marks)

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