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Assignment - 2.2

Que-1]

Given that

solution ⇒ Profit or loss = (Forward price - spot price) x1000

- forward price = $2050
- Contract size = 1000 ounces

May - 2024 spot price ($)	profit or Loss ($)
1400	(2050-1400) x1000 = 650,000
1500	(2050-1500) x1000 = 550,000
1560	(2050-1560) x1000 = 490,000
1600	(2050-1600) x1000 = 450,000
1800	(2050-1800) x1000 = 250,000
2050	(2050-2050) x1000 = 0
2200	(2050-2200) x1000 = -150,000
2300	(2050-2300) x1000 = -250,000
2400	(2050-2400) x1000 = -350,000

Que-2

solution → Profit or Loss = (final Price - Initial price) x contract size
× Number of contract

(a)

solution → profit/Loss = (5.80 - 5.20) x 5000 = 0.60 x 5000
= $3000 (profit)

(b)

solution → profit/Loss = (1.6 - 1.4) x 37500
= $7500 (Profit)

(c)

solution → Profit/Loss = (7500 - 7800) x 25 x 40 = (-300) x 25 x 40
= -300,000 AUD (Loss)

(d)

solution → Profit/Loss = (13500 - 13000) x 5 x 2 = RMB 5000 (profit)

Q. 3)

Spot

- immediate trade where payment & delivery are together

Future

trade is decided today delivery is in future.

- A future contract works by —

1. Contract specification: each contract specifies quantity, delivery, month and location.
2. Order placement
3. Initial margin & position establishment.
4. Market valuation
5. Closing out / Delivery.

- Role of commodity exchange

1. Price discovery & transparency
2. Settlement & delivery facilitation.

Q. 6) put-call parity —

$$C - P = S - Ke^{-rT}$$

$C = ₹20$, $P = ₹5$, $I \Rightarrow ₹130$, $K ₹120$ $T = 1$

$$20 - 5 = 130 - 120e^{-r.1}$$

$$\Rightarrow \quad 15 = 130 - 120e^{-r.1}$$

$$120\,e^{-\gamma} = 115$$

$$e^{-\gamma} = \frac{115}{120} = \frac{23}{24} = 0.96.$$

$$-\gamma = \ln(0.96)$$

$$\gamma = -\ln(0.96)$$

$$= -(-0.04\overset{3}{2}6)$$

$$k = 4.3\%.$$