

SMFD

ASSN-2.2

NAMAN → 1→2
 ASHISH → 3→4
 SHUBHAM → 5→6

①

<u>SPOT PRICE (\$)</u>		<u>P/L (\$)</u>
1400	—	+6,50,000
1500	—	+5,50,000
1560	—	+4,90,000
1600	—	+4,50,000
1800	—	+2,50,000
2050	—	0
2200	—	-7,50,000
2300	—	-2,50,000
2400	—	-3,50,000

② (a) Size - 5000 bushels (b) Size - 37500 pounds

Initial Price - \$5.20 Initial Price - \$1.60

Closing Price - \$5.80 Final Price - \$1.40

No. of contracts = 1 No. of contracts = 1

So, Profit = $(5.8 - 5.2) \times 5000 = \boxed{\$3000}$ So, Profit = $(1.6 - 1.4) \times 37500 = \boxed{\$7500}$

(c) Contract Value → \$125 / indent pt

Initial Price = 7500 points

Final Price = 7800 points

No. of contracts = 40

So, Loss = $(7800 - 7500) \times 125 \times 40 = \boxed{\$1,50,000}$

1) Contract size = 5 tonnes

Initial Price = RM 15000/ton

Final Price = RM 13500 per tonne

No. of contracts = 3

Loss

$$= (13500 - 15000)$$

$\times 5 \times 3$

$$= \boxed{\text{RM } 22500}$$

loss

③ A spot contract is an agreement to buy or sell a commodity immediately at the current market price.

• A futures contract is an agreement to buy or sell the commodity at a fixed price on a future date.

⇒ Future contracts are standardized and traded on commodity exchanges. The exchange sets contract terms (quantity, expiry); issues daily settlements and uses a clearing house to reduce default risk.

⇒ Commodity contracts handle delivery rules; but most futures are settled before expiry. They allow hedging and speculation.

Ans 4 (a) strike price = \$90

buys European put option for \$3

to make profit in put option

$$\text{profit} = \max(K - S_T, 0)$$

$K = 90$, S_T : stock price at maturity

considering option cost for \$3, the investor makes net profit only if

$$\max(K - S_T, 0) > 3 \Rightarrow S_T < 37$$

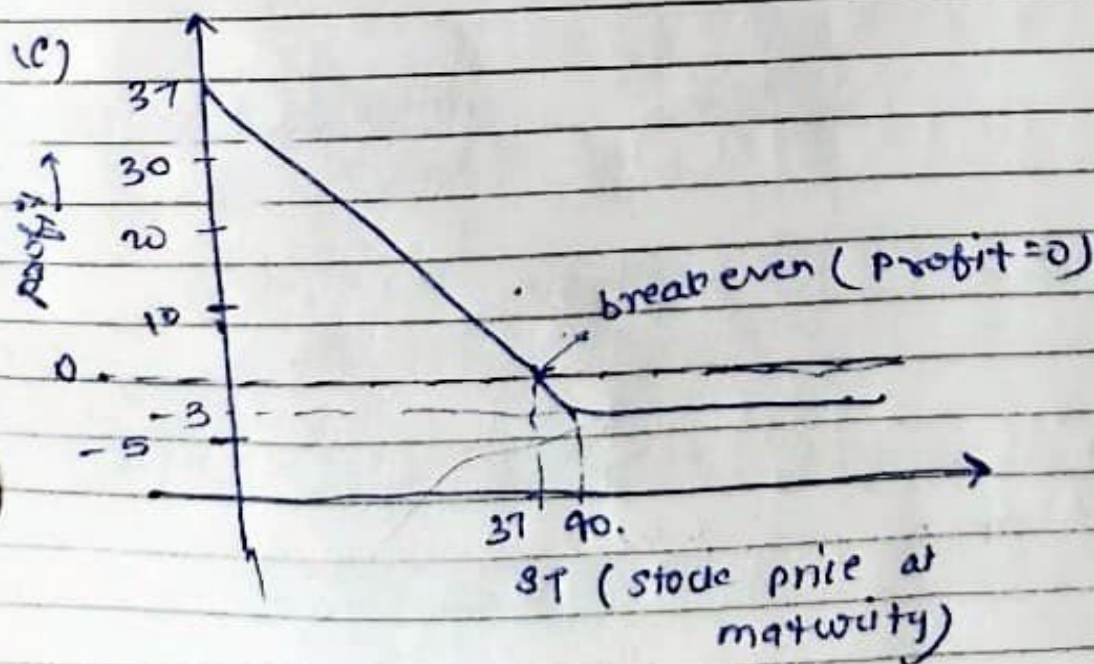
so to make profit stock price at maturity should be below \$37.

(b) A put option is only exercised if

$$K - S_T > 0 \Rightarrow S_T < 90$$

if it's more than 90 then there's no point in exercising it because stock price is now trading at higher price.

so better to face a loss of \$3 only.



Ans 5 Let s_T be the price of underlying asset at maturity and F be the forward price agreed upon at the start of the contract.

K (strike price) = F

T Time of maturity

- Payoff from long forward contract

$$\text{forward payoff} = s_T - F$$

- Payoff from long European put

$$\text{Put payoff} = \max(F - s_T, 0)$$

$$\text{Total payoff} = (s_T - F) + \max(F - s_T, 0)$$

$$\text{if } s_T \geq F \quad \text{total payoff} = s_T - F$$

$$\text{if } s_T < F \quad \text{total} = s_T - F + F - s_T = 0$$

$$\text{which is } \Rightarrow \text{total payoff} = \max(s_T - F, 0)$$

which is exactly the payoff of a European call option with strike = F and maturity T .

Ans 6

Price of put option (P) = \$5

Price of call option (C) = \$20

Current stock price = \$130

K = strike price = \$120

Time to maturity (T) = 1 year

Put-call parity formula $\Rightarrow C - P = S - Ke^{-rT}$

$$e^{-rT} = \frac{K}{S - C + P} = \frac{120}{130 - 20 + 5} = \frac{120}{115}$$

$$e^{-r} = \frac{120}{115} \Rightarrow \boxed{r = -4.26\%}$$