32.

Exposure : Receivable

Quantum and Currency : $35000

Due Date : 30th June

Here, exposure currency is $

And contract given is £ contract

∴ we will have to find equivalent £ exposure from $ exposure given, using the strike rate.

Hedging strategy : In case we had $ option, hedging strategy would be to buy $ put option.

Since £ option is available, we will hedge the exposure by buying £ call option. We are given two strike prices. We select the cheaper strike i.e. £1.50 Call option. Note that premium is given in cents.

$$N = \frac{\text{Size of Exposure}}{\text{Size of Contract}} = \frac{\$35000 \times \frac{1}{\frac{\$}{£}1.50}}{£2500} =$$ 9.33 or 9 contracts

Hedging strategy = Buy 9 £ call options at a strike of $1.50/£

Settlement:

A. Actual sale of $35,000 on due date at prevailing spot rate

= $35,000 x $\left(\frac{£}{\$}\right)_{spot-bid}$

=$35,000 x $\frac{1}{\left(\frac{\$}{£}\right)_{spot-ask}\ 1.4850}$ = £23,569.02

B. Premium = 9 x £2500 x $\left(\frac{\$}{£}\right)0.068$ = $1,530

Equivalent cost in pounds = $1,530 x $\left(\frac{£}{\$}\right)_{spot-ask}$ = $\$1{,}530 \times \frac{1}{\left(\frac{\$}{£}\right)_{spot-bid}\ 1.5190}$ = £1007.24

C. S_T = 1 £ = $1.4850

X = 1£ = $1.5000

S_T < X, hence, call option will not be exercised. Therefore, no payoff.

Total hedge proceeds = A – B + C = £22,561.78 [I]

Now, we select the other strike i.e. £1.45 Call option. Note that premium is given in cents.

$$N - \frac{\text{Size of Exposure}}{\text{Size of Contract}} - \frac{\$35000 \times \frac{1}{\frac{\$}{£}1.45}}{£2500} -$$ 9.66 or 10 contracts

Hedging strategy = Buy 10 £ call options at a strike of $1.45/£

Settlement:

A. Actual sale of $35,000 on due date at prevailing spot rate

= $35,000 x $\left(\frac{£}{\$}\right)_{spot-bid}$

=$35,000 x $\frac{1}{\left(\frac{\$}{£}\right)_{spot-ask}}$ 1.4850 = £23,569.02

B. Premium = 10 x £2500 x $\left(\frac{\$}{£}\right)$ 0.0895 = $2,237.5

Equivalent cost in pounds = $2,237.5 x $\left(\frac{£}{\$}\right)_{spot-ask}$ = $\$2,237.5 \times \frac{1}{\left(\frac{\$}{£}\right)_{spot-bid}}$ 1.5190 = £1473.01

C. S_T = 1 £ = $1.4850

X = 1£ = $1.4500

S_T >X, hence, call option will be exercised. Therefore, payoff = [10 x Max(1.485-1.45,0) x 2500] = $875

Equivalent pound gains = $875/$\left(\frac{\$}{£}\right)_{spot-ask}$ 1.4850 = £589.23

Total hedge proceeds = A – B + C = £22,685.24 [II]

Comparing [I] and [II], we can say that hedging with strike price, £1.45 is more beneficial, since pound proceeds are higher.