DP07

Treasury

9 MAY 2000

1. Time allowed : Three (3) hours
2. Total number of questions : Six (6) questions
3. Number of questions to be answered : Five (5) questions [20 marks each]
4. Show details of workings where appropriate. Silent, non-programmable calculators may be used.
5. Begin each answer to a new question on a fresh page.
6. Answer **all** questions in **English**.

ANSWER FIVE (5) QUESTIONS ONLY

1. (a) Explain the following terms in the context of foreign exchange dealings:

    (i) Tom/Next [1]

    (ii) Big figure [1]

    (iii) Cross Foreign Exchange Quotations [1]

    (iv) Forward Option Delivery Contracts [1]

(b) Dollar-buying sentiment is reviving after **"market players adjusted their short positions"** following a moderate selling against the Japanese Yen in early trading. Dollars were well supported yesterday by the 1.25% gain in the Dow Jones Industrial Average Index overnight, triggered by expectation that US Federal Open Market Committee (FOMC) would not hike the interest rates further, dealers said.

However, the **"dollar weakened against the SGD"** at the close yesterday. It opened at 1.6510/15 and closed at 1.6420/25. Dealers attributed the movements to the **50** points drop in the local stock index, which in turn affected the currency market.

Meanwhile, the Kuala Lumpur Interbank Offered Rates (KLIBOR) were unchanged yesterday amid Bank Negara Malaysia (BNM)'s tender of RM4.0billion in the money market, a dealer said. BNM yesterday borrowed RM3.0billion of three-week money at between 2.70% and 2.74% from the **"conventional fund"**, and RM1.0billion of one-week money from the **"Islamic banking system"** at between 2.50% and 2.60%.

From the above report:

(i) Explain what is meant by **"market players adjusted their short positions"** in paragraph 1. [2]

(ii) Explain whether you agree or disagree with the above report that the "**dollar weakened against the SGD"** attributed to the reason mentioned in paragraph 2. [2]

(iii) What is the purpose of BNM's tender of RM4.0billion in the money market? [2]

(iv) Explain briefly the differences between the **"conventional fund"** and the **"Islamic banking system"** in paragraph 3. [2]

(c) The following exchange rate quotations appear on the trading system screen:

USD/JPY = 100.00
EUR/USD = 1.0000

A trainee dealer observing the above quotations commented that the market is now adopting a fixed exchange rate system as the exchange rates are now at parity. Do you agree with the trainee dealer's comments? Why? [4]

(d) Explain the roles of currency speculators in the foreign exchange market. [2]

(e) List **two** principal activities currently conducted in Labuan International Offshore Financial Centre (IOFC). [2]

(Total:20 marks)

2. The following rates are quoted:

	USD/MYR	NZD/USD	USD/JPY
Spot	3.7995/05	0.4800/10	105.10/15
1-month	110-100	5-10	55-50
2-month	220-210	10-15	90-85
3-month	330-320	20-25	145-140
6-month	665-655	40-45	330-325

Calculate the following (to show full workings):

(a) Bank buys NZD/USD value spot. [2]

(b) Bank sells NZD/MYR 6-month fixed delivery. [3]

(c) Bank sells JPY/MYR option spot to 1-month (express answer in 100 units). [3]

(d) Importer buys USD/MYR fixed 3-month. [3]

(e) Exporter sells USD/MYR option 2-month to 3-month. [3]

(f) Your customer received a USD1,000,000 telegraphic transfer value spot. He needs to transfer the following directly to his foreign exchange currency account with your bank:

NZD500,000 to his NZD account
JPY30,000,000 to his JPY account

The balance is to be converted into Ringgit (MYR) and credited to his current account with your bank.

(i) What is the amount of USD equivalent for conversion to NZD? [2]

(ii) What is the amount of USD equivalent for conversion to JPY? [2]

(iii) What is the MYR amount arising from the balance of USD remaining? [2]

(Assume no margins and all exchange controls/regulations are complied with.)

(Total:20 marks)

3. (a) Your customer received an inward telegraphic transfer from Australia for USD100,000 for value today i.e. 28 April 2000. Due to the holidays in United States of America, the market today is dealing for spot value as at 3 May 2000.

The following are your bank rates:

Spot USD/MYR (value 3 May 2000)	3.7995/05
USD interest rates (1 day to 1 week)	5.50%
MYR interest rates (1 day to 1 week)	3.00%
AUD interest rates (1 day to 1 week)	5.00%

Counter Rates	Selling	Buying	Buying
MYR to 1 unit of Foreign Currency	TT/OD	TT	OD
1 US dollar (USD)	3.8250	3.7750	3.7650
1 Australian dollar (AUD)	2.4060	2.3590	2.3430

(i) Calculate the exchange rate you will quote to your customer for his telegraphic transfer for value today (based on the spot rate) after adjusting for the difference in the interest rates given above. (Use the general swap formula for your calculation.) [4]

(ii) How much would the customer receive in MYR if the transaction was made by bank draft and the bank credited his account using the counter rates given above? (Assume no margins and no other bank charges are imposed.) [2]

(b) Your customer entered into a fixed foreign exchange contract for his export of USD100,000 at 3.7800 maturing on 11 June 2000. Due to unforeseen circumstances, his buyer cancelled the order. Your customer now wishes to cancel the contract with your bank today i.e. 9 May 2000.

The following information is given:

Spot (11 May 2000)	3.7995/05
1 month	-10/+10
2 month	-20/0
3 month	-30/-10

How much profit/loss would the customer incur if the bank closed out the foreign exchange contract? (Assume all approvals and exchange controls are complied with and no margins or other costs incurred on closing out.) [3]

(c) Your interbank Yen dealer has executed the following speculative trades:

Transaction	**Amount (JPY)**	**Currency**	**Rate**
Sold	100million	USD/JPY	100.00
Purchased	80million	USD/JPY	98.90
Sold	50million	USD/JPY	98.50
Purchased	20million	USD/JPY	100.80

(i) What is the foreign exchange USD/JPY position (in JPY) of the dealer and the average cost? [3]

(ii) If the day-end spot USD/JPY revaluation rate is 99.70 and the USD/MYR revaluation rate is 3.8000, what is the revaluation profit/loss of this position in MYR? [3]

(d) Your customer made the following comments:

As the MYR is pegged at 3.8000 to the USD, there is no forward market as there is no necessity to hedge USD/MYR anymore.

Do you agree with your customer's comments? Give reasons. [2]

(e) You request a 6-month USD/MYR swap from a bank, for which it quotes:

"170-180"

(i) If you intend to sell/buy USD/MYR, which swap rate will you hit? [2]

(ii) Will you sell/buy USD/MYR at a premium or discount? [1]

(Total:20 marks)

4. (a) (i) The Eurodollar deposit is said to be the most actively traded deposit in the Eurocurrency markets. What is a Eurodollar deposit and what is the major difference between a Eurodollar deposit and a domestic U.S. dollar deposit? [3]

(ii) Explain why Eurocurrency deposit interest rates are normally higher than their respective domestic interest rates. [2]

(iii) What would be the impact on the "Euro" interest rate of a currency that is undergoing continuous devaluation pressure and where capital outflow controls prevent non-residents from borrowing in the domestic money market? [2]

(iv) The following are the rates scenario and regulatory requirements in Faithland:

3-month deposit	8.0%
Reserve requirements (non-interest bearing)	10.0%
Deposit insurance	0.5%

Calculate the break-even Eurocurrency deposit rate (to 2 decimal places) for Faithland's currency. (Provide calculations to support your answer.) [3]

(b) On Wednesday, 1 March 2000, Phil Bank placed USD5,000,000 T/N with Ray Bank at the rate of 4.75% per annum. Friday, 3 March 2000 is a bank holiday in New York but not in Kuala Lumpur.

(i) What do you understand by the term "eligible value date"? [1]

(ii) Determine the value dates for the T/N transaction above. [2]

(iii) Calculate the repayment proceeds to be received on maturity for this transaction. [3]

(c) Money brokers play an important role in the international financial markets.

(i) Explain the role played by money brokers. [1]

(ii) When a money broker quotes a "choice price", what does this mean? [1]

(iii) What are the reasons for "choice prices" being quoted in the money market? [2]
(Total:20 marks)

5. (a) It is said that in terms of the Ringgit book, Malaysian banks that have deliberately established a "negatively gapped position" from the middle of 1998 till today, would have reaped huge accrual gains.

(i) Explain what a "negatively gapped position" is and what conditions have enabled such gains to be realised. [2]

(ii) Pursuing a negative gapped position under a negative yield curve environment is said to be extremely costly. Explain why this is so by using an illustration. [3]

(iii) If interest rates have remained stable for a long time and an imminent rise is due, what kind of gapping strategy should a bank pursue? [1]

(iv) What types of assets and liabilities should a bank acquire during a rising interest rates environment? [2]

(v) What types of assets and liabilities should a bank acquire when interest rates have peaked? [2]

(b) The Malaysian Treasury Bill (MTB) is one of the most actively traded Scriptless Securities Trading System (SSTS) instruments in the Malaysian capital market.

(i) What are MTB's and how are they issued and traded? [3]

(ii) Name the **three** series of MTBs and their regularity of issue. [2]

(c) Stan Bank, a principal dealer of SSTS Securities successfully tendered for RM25million face value of MTBs of **182** days to maturity issued on 3 March 2000. One half of the successful tender was at a discount rate of 2.715% per annum while the other half was awarded at a discount rate of 2.805% per annum.

(i) Calculate the total discounted proceeds that Stan Bank will have to pay as result of this successful tender. [3]

(ii) What is the average effective yield (simple interest equivalent) of this successful tender? (Provide your answer to 3 decimal places.) [2]
(Total:20 marks)

6. (a) Explain the risks involved and exchange control requirements (if any) associated with the following transactions or situations:

(i) A Malaysian trading company which exported furniture to Australia received payments in USD wishes to pay its local Malaysian supplier operating in Ipoh, Perak in USD. [2]

(ii) A Malaysian company which does not have any overseas operation or transactions in foreign currencies wishes to borrow USD10million from an offshore bank to finance its local operations. [4]

(iii) A Malaysian exporter wants to hedge his export proceeds in JPY for the next **10** years with a local bank by entering into a 10-year forward foreign exchange contract. [4]

(iv) Due to shortage of staff, the chief dealer of Bank XYZ also acts as a Treasury Controller responsible for all back room processing and operations. [2]

(b) Explain any **two** of the following terms in the context of interest rate swaps and options.

(i) in the money [2]

(ii) intrinsic value [2]

(iii) caps [2]

(iv) basis swaps [2]

(c) A company operating internationally is exposed to **four** types of currency exposure risks. Explain any **two** of the following currency exposure risks mentioned below and support your explanations with examples.

(i) transaction [2]

(ii) translation [2]

(iii) economic [2]

(iv) trading [2]

(Total:20 marks)

OUTLINE ANSWERS

Question 1

Candidates did reasonably well in this question, which required explanation on various foreign-exchange dealing terms. Most candidates, however, were unable to secure high marks due to superficial definition or explanation. Those who failed this question answered out of context – not directly to the question asked.

1. (a) (i) Tom/Next

Tomorrow against the day after tomorrow. Swaps' value tomorrow against value spot.

(ii) Big Figure

The second decimal figure, in the case of rates quoted to 4 decimal places e.g. 3.7<u>9</u>80 or the unit figure, in the case of rates quoted to 2 decimal places e.g. 9<u>9</u>.01.

(iii) A Cross Foreign Exchange Quotation

A cross foreign exchange quotation is one which expresses one, third currency against another third currency.

(iv) Forward Option Delivery Contract

A contract to buy or sell a certain quantity of foreign currency at a fixed agreed rate of exchange for delivery during a specified period of the contract but no later than a specified future date.

(b) (i) "market players adjusted their short positions"

Change in dealing strategies. Reduce their oversold trading positions or change to square.

(ii) Based on the rates given, the dollar actually strengthened against the SGD from 1.6420/25 (opening) to 1.6510/15 (closing). A drop in the local stock index is also likely to weaken the SGD, hence the dollar should strengthen, not weaken.

(iii) Purpose of Bank Negara Malaysia's tender of RM4.0 billion

- Day-to-day management of reserves to smoothen fluctuations in liquidity.
- Sterilise large inflows of funds.

(iv) Difference between the conventional fund and the Islamic Banking System

Conventional fund

- interest determined by market forces.

Islamic Banking System

- "returns" based on different modes of financing
- "halal" financial instruments.

(c) The current exchange rate regime adopted by the market is the floating exchange rate system. Under this system the exchange rate is determined by the supply and demand in an open and unrestricted market as in the case of the Euro and Yen.

The parity in exchange is a mere coincidence due to market forces operating at the time.

(d) Roles of money-broking companies:

- act as arrangers of deals
- provide 'running' prices
- 'narrow' the spread of price

(e) Labuan IOFC

- Offshore Banking Operations
- Trust and Fund Management
- Offshore Insurance and Offshore Insurance related business
- Offshore Investment Holding Companies.

Question 2

All the candidates attempted this popular foreign-exchange question. Candidates were required to calculate basic foreign-exchange transactions. A few candidates performed well with some scoring high marks. Others, however, lost marks by merely showing the calculations and not stating the correct answers or by not showing the full calculations.

2. (a) NZD/USD value spot = 0.4800

(b) NZD/MYR 6-month fixed delivery = (3.8005 - 655) x (.4810 + 45)
= 1.8133

(c) JPY/MYR spot rate = 3.8005 / 105.10 = 3.6160
JPY/MYR 1-month rate = (3.8005 -100) / (105.10 - 55) = 3.6255
Option rate = 1-month rate = 3.6255

(d) USD/MYR fixed 3-month = (3.8005 - 320) = 3.7685

(e) USD/MYR value 2-month = (3.7995 – 220) = 3.7775

USD/MYR value 3-month = (3.7995 - 330) = 3.7665

Option rate = 3-month rate = 3.7665

(f) (i) Convert to NZD at 0.4810

USD amount = 500,000 x .4810 = USD240,500

(ii) Convert to JPY at 105.10

USD amount = 30,000,000 / 105.10 = USD285,442.43
or = USD285.442.44

(iii) Balance = USD1,000,000 – 240,500 – 285,442.43 = USD474,057.57

or = USD1,000,000 – 240,500 – 285,442.44 = USD474,057.56

Amount in MYR = USD474,057.57 x 3.7995 = MYR1,801,181.74

or = USD474,057.56 x 3.7995 = MYR1,801,181.70

Question 3

Most candidates did not do well on the question which required a deeper understanding of foreign-exchange applications, such as swaps and cancellation of contracts. Although candidates were able to provide the formula for the calculation of swap points, they failed to apply it correctly. Candidates lost further marks when they failed to take into account the "swap points" for cancellation of contracts.

3. (a) (i) Using the simple swap formula

$$\text{Swap points} = \frac{2.50 \times 3.7995 \times 6}{360 \times 100} = 15 \text{ points or } 16 \text{ points}$$

Value today rate = 3.7995 + 0.0015 = 3.8010

or = 3.7995 + 0.0016 = 3.8011

(ii) 100,000 x 3.7650 = MYR376,500

(b) The contract is closed out as follows:

Original contract rate	3.7800
Current Offer Rate	3.8005
Loss to the customer	0.0205
Adjustment for swap points	+ 0.0010

Amount of loss = (0.0205 + .0010) x USD100,000 = MYR2150

(c) (i)

JPY		**USD**	**or USD**
-100,000,000	+100,000,000 / 100.0	+1,000,000.00	+1,000,000.00
+80,000,000	-80,000,000 / 98.90	-808,897.87	-808,897.88
-50,000,000	-50,000,000 / 98.50	+507,614.21	+507,614.21
+20,000,000	-20,000,000 / 100.80	-198,412.69	-198,412.70
-50,000,000		+500,303.65	+500,303.63

Position = Short JPY50,000,000

Average Cost = 50,000,000/500,303.65 = 99.94

or = 50,000,000/500,303.63 = 99.94

(ii) Revaluation Loss
= (99.70 – 99.94) x USD500,303.65 = - JPY120,072.87

or = (99.70 – 99.94) x USD500,303.63 = - JPY120,072.87

In terms of MYR = - 120,072.87 x 3.8000/99.70 = - MYR4,576.49

or = - MYR4,576.50

(d) The forward market still exists as the forward rate is determined primarily by the money market interest differentials of the currencies as well as market demand and supply. Various parties may still wish to enter into forward contracts for USD/MYR due to the uncertainty as to when the peg may be lifted.

(e) (i) 180

(ii) Premium

Question 4

Only three candidates passed this money market question which covered various areas such as Eurocurrency market, value dates and money brokers. Candidates failed to distinguish between Euro interest rates and Euro foreign exchange rates. The section on "value dates" was also not well understood. It was surprising that most candidates could not articulate the understanding on the role of a broker in the foreign exchange and money market. One reason could be because candidates tend to spot topics and this question on money brokers could have caught them off-guard, as this is not a commonly asked question.

4. (a) (i) A Eurodollar deposit is a U.S. dollar deposit traded outside its country of origin, i.e. outside the United States of America.

The major difference between a Eurodollar deposit and a domestic U.S. dollar deposit is that trading in the Eurodollar deposit is unregulated and there are no reserve requirements imposed on a Eurodollar deposit.

(ii) Eurocurrency deposit interest rates are normally higher than their domestic interest rates due to the following reasons:

- Banks can afford to pay higher interest rates as they do not have to pay additional costs pertaining to maintaining reserve requirements or deposit insurance in the Eurocurrency markets.
- The perceived sovereign risk associated with the specific country where the Eurocurrency is deposited often necessitates that a premium be paid over the domestic interest rate of the Eurocurrency concerned.

(iii) The Euro interest rate of a currency undergoing devaluation pressure and where capital controls prevent non-residents from borrowing in the domestic market will rise in the Eurocurrency markets. This is because entities seeking to profit on an expected devaluation will access the Eurocurrency markets to cover their short positions in that currency thereby pushing up the currency's Euro interest rate way above its domestic interest rate.

(iv) The break-even Eurocurrency rate

$= \dfrac{\text{Nominal Interest Rate - Returns on Reserve Requirements}}{(1 - [\text{Reserve Ratio + Insurance costs}])}$

= (8.0 % - 0)/(1 - [10.0 % + 0.5 %])

= 8.938 %

= <u>8.94 %</u>

(b) (i) To be an "eligible value date", a value date must be a business day in the home country/countries of the currency/currencies involved in the transaction.

(ii) The value date for the T/N transaction would be Thursday March 2, 2000 to Monday March 6, 2000. This is because Friday March 3, 2000, the original repayment date for this transaction is not a good business day and therefore the repayment would be made on the next available business day which is Monday March 6, 2000.

(iii) No. of days in transaction = March 6 – March 2

= 4 days

Proceeds to be received on maturity

= RM5,000,000 x (1 + [4.75 % x 4 /360])

= <u>RM5,002,638.89</u>

(c) (i) Money brokers act as intermediaries in the financial markets bringing bidders and offerors to the market. In closing or marrying a deal, the money broker earns a commission.

(ii) A "choice price" is one where the bid and offer rates are the same. This is also known as an either way price.

(iii) Choice prices can occur in the market due to the lender not being able to lend to the borrower for the following reasons:

- There is no credit limit extended to the borrower.
- The lender is "full" on counter-party limit or country limit.
- Lender and borrower cannot agree on amount.

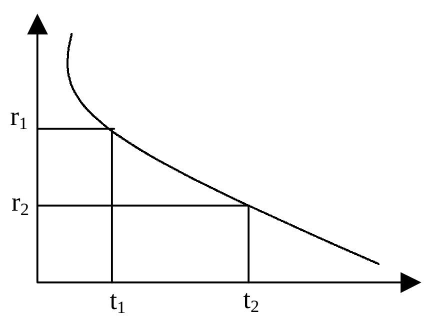
Question 5

The question on interest rate reading and yield curve were better answered than the question on Malaysian Treasury Bills. However, the application of the shape of yield curves to the acquisition of types of assets and liabilities was not well understood. Surprisingly, many candidates could not explain the Malaysian Treasury Bills. They did not understand the characteristics, purpose and basic trading aspects of this instrument, although notes on this are available in the study manual (Chapter 18, Page 193).

5. (a) (i) A "negatively gapped position" is one where we have long-term assets funded by short-term liabilities. In other words, one lends "long" and borrows "short".

The conditions that have enabled such gains to be realised were the sharp decline in the general level of Ringgit interest rates from their peaks in the first half of 1998 and the ample liquidity in the money market since mid-1998.

(ii) Bank lends at r_2 for tenor t_2 and borrows at r_1 for tenor t_1. In this negative gapped position with a negative yield curve environment, the Bank takes a negative spread of r_2-r_1 and at the same time assumes a liquidity risk for the period between t_2-t_1. Unless the level of interest rates declines drastically, the Bank will continue to assume a negative impact on net interest income while at the same time take liquidity risk for this position.



(iii) The Bank should pursue a positive gapped position, i.e. to have short-term assets funded by long-term liabilities.

(iv) A Bank should acquire floating rate assets and fixed rate liabilities during a rising interest rate environment.

(v) A Bank should acquire fixed rate assets and floating rate liabilities when interest rates have peaked.

(b) (i) MTBs are short-term securities issued by the Government of Malaysia with maturities not exceeding one year.

Primary issues of MTBs are auctioned on a tender basis through the Principal Dealership System while secondary trading of MTBs are quoted according to 10 trading bands based on the number of remaining days to maturity of the MTB.

MTBs are traded on a discounted basis calculated on a yield per annum basis that is expressed as a rate of discount to three decimal places and are payable at face value on maturity date.

(ii) The three series of MTBs are 91 days, 182 days and 364 days.

91 days MTBs are issued weekly while the 182 days and 364 days MTBs are issued fortnightly and monthly respectively.

(c) (i) Total Discounted Proceeds
= FV (1 - [rate x days/365])

= RM12,500,000 (1 - [2.715 % x 182/365])
+ RM12,500,000 (1 - [2.805 % x 182/365])

= RM12,330,777.40 + RM 12,325,167.81

= <u>RM24,655,945.21</u>

(ii) Average discount rate = (2.715 + 2.805)/2
= 2.760 %

Average effective yield = d / (1 - (d x n/365)
Where d = discount rate
n = days to maturity,
= 2.76 % / (1 - [2.76 % x 182/365])
= 2.7985 %
= <u>2.799 %</u>

<u>Question 6</u>

Another poorly and least attempted question was on various types of risk. Candidates had difficulties, particularly in the first part, which required a clear analysis of the various types of risks. Some candidates were also unable to identify the correct ECM notices relating to the transactions given.

6. (a) (i)
- No foreign exchange risk.
- ECM 4.

(ii)
- Transaction risk.
- Translation risk.
- Interest rate risk.
- ECM 10.

(iii)
- Pre-settlement risk.
- Credit risk.
- Liquidity risk.
- ECM 2 & 5.

(iv)
- Operational risk.

(b) (i) An option whose strike price is more favourable to the option buyer than the current market price is said to be **in the money**.

(ii) The **intrinsic value** is the profit that could be made if the option were to be exercised by the buyer immediately. The intrinsic value is the difference between the strike price and the current market price.

(iii) **Caps** are over-the-counter interest rate options that enable the buyer to fix a maximum borrowing rate for a future period.

(iv) **Basis swaps** involve the exchange of interest streams which are calculated on two different floating rate basis.

(c) (i) Transaction
This occurs whenever a company has a commitment to pay or receive a foreign currency either immediately or at some future date. It is the result of a company's business activities, e.g. purchase of machinery from Japan in Yen.

(ii) Translation
Translation exposure risk arises when a company has assets and liabilities which are denominated in foreign currencies. Movements in the exchange rates between the values of the foreign currencies and the home currency between two reporting balance sheet periods will alter the value of the company's balance sheet. For example, holding of shares in overseas companies.

(iii) Economic exposure risk
Economic exposure risk arises when changes in exchange rates over a period of time affect the competitiveness of a company via its pricing and expenditure structure. For example, the appreciation of the Japanese Yen increases the cost of Proton Cars.

(iv) Trading exposure risk
Trading exposure risk arises when an institution deliberately takes on a currency exposure with the intention of profiting from it. For example, a Malaysian company decides not to hedge Yen denominated export proceeds due in 3 months time hoping for the Yen to appreciate further against the MYR.