Chapter 2

Multiple-Choice Questions

1. **D**
2. **B**
3. **C**
4. **B**
5. **A**
6. **C**
7. **C**
8. **B**
9. **C**
10. **D**

Short-Answer Questions

Question 1

(a) Use the future value formula: $FV = PV\ (1+i)^n$
$FV = 11{,}000\ (1+0.03)^2 = RM11{,}669.90$

(b) Use the future value of the ordinary annuity formula:

Future Value of an Ordinary Annuity = $PMT\ [\frac{[(1+i)^n-1)}{i}]$

Substitute : FV = 11,669.90 i = 5.5%/12 = 0.4583% n = 2x 12 = 24
Solve for PMT = RM514.59

Question 2

Amount of loan taken = 450,000 – (1/2 X 100,000) = 400,000
Present Value of an Ordinary Annuity(PV) = PMT [[1- (1+i)^(-n))/i]

Substitute: PV = 350,000 i = 7.5%/12 = 0.625% n = 25 × 12 = 300
Solve for PMT = RM2,955.96

Question 3

The inflation-adjusted interest rate/real rate of return = $[(\frac{(1+nominal\ interest\ rate)}{(1+inflation\ rate)} - 1] \times 100$

= [(1 +0.050)/(1 + 0.02) - 1] × 100 = 2.9%

Question 4

Use the future value of a single amount formula: $FV = PV\ (1+i)^n$

Substitute: PV = 3,000 i = 15%/365 = 0.04109% n = 100
Solve for PMT = RM3,125

Question 5

Rule of 72 is a quick pay to estimate the time required to approximately double their investment for a given rate of return.

Number of years for investment to double = 72/ Rate of return

For example, if the rate of return is 10%. It would take approximately 7.2 years (= 72/10) for the investment to roughly double in value.

Discussion Questions

Question 1

(a) Answers should contain some of the following points:

Definition of an asset:
- Focus on productive assets
- Assets are not just what one owns, but something that puts cash flow in your pocket, whether you work or not

Definition of a liability:
- Liabilities are items that take cashflow out of your pocket

Double entry → Assets and liabilities are created together

A house is a liability:
- There is a net mortgage payment attached to the ownership
- The house then becomes an asset to the bank (mortgage payments adds to bank income), but a liability to the home-owners (mortgage becomes an expense)
- Therefore, the house does not add to cash flow or income to the house-owner
- Example: If you purchased a house and you are also staying in it

A house is a productive asset to the house-owner if:
- It is able to generate income (e.g. rental income)
- The rental payments are greater than the mortgage payments he/she has to

pay (b) Answers should contain some of the following points:

Ordinary income
- Income earned from employment – stops generating cash flow when one stops working

Portfolio income
- Income from capital gains i.e. buy low and sell high concept
- Highly dependent on the performance of the stock market and property market to a certain extent
- Need to trade or perform exchanges to generate income

Cashflow income
- Passive income – Income that is sustained even if one stops working.

Question 2

Answers should contain some of the following points:
- Lack of commitment to follow through budgets and financial plans
- Lack of control and discipline over spending
- Lack of awareness over personal financial situation
- Bad money habits – e.g. gambling, being wasteful, unable to differentiate needs and wants
- Bad health
- Negative personal event(s)- e.g. loss of work, getting cheated etc.
- Any other relevant answer

Question 3

Answers may differ. However, generally, needs represent things that we cannot live without (e.g. basic needs such as food, clothing and shelter), whereas a want is a desire i.e. something you would like to have.

Needs and wants could change over time. For instance:
- A mobile phone may have been a want 20 years ago as most people could be connected via a

landline phone. However, in the present day and age, a basic mobile phone may be a necessity as people are constantly on the move. On the other hand, a mobile phone with the latest camera or other features may turn this need into a want.

- A car may be a want for a person who lives close to work or public transport and have an administrative job. However, a reliable car may be a necessity if he/she is required to travel and do sales outstation. On the other hand, wanting a luxury car beyond one's means is a want.

Case Study

Question 1

Inflow		
Item	Monthly	Yearly
Omar		
Net take-home pay	12,550	150,600
Bonus (2 months)		25,100
Siti		
Net take-home pay	8,960	107,520
Bonus (1.5 months)		13,440
Total		**296,660**

Outflow		
Item	Monthly	Yearly
Maid	N/A	18,000
Housing loan	1,350	16,200
Car loan	2,438	29,256
Danial's school fees	1,200	14,440
Mariah's school fees	1,500	18,000
Other children's expenses	2,500	30,000
Omar's petrol	600	6,000
Omar's parking	150	1,800
Omar's toll	450	5,400
Other car expenses	N/A	2,800
Food	2,000	24,000
Utilities	800	9,600
Children's education insurance	300	3,600
Eating out	1,000	12,000

Assessment and quit rent	300	3,600
Household miscellaneous expenses	1,000	12,000
Omar's personal expenses	700	8,400
Siti's personal expenses	900	10,800
Credit card payments	1,500	18,000
	N/A	25,000
Total		**268,856**

Net worth statement

	RM
Liquid asset	
Saving account	10,000
Fixed deposit account	40,000
Omar's unit trusts and shares	38,000
Siti's unit trusts and shares	45,000
Other assets	
Current house	550,000
Vehicles	0
Omar's EPF	155,000
Siti's EPF	135,000
Total assets	973,000
Short-term liabilities	
Credit card debts	15,550
Car loan	87,768
Long-term liabilities	
Housing loan balance	203,000
Total liabilities	306,318
Net worth	666,682

Question 2

Ratio

Net Debt to income	=	Annual Debt Obligations / Annual Take Home Pay			
With Bonus		63,456 / 296,660	=	0.21	21%
Without Bonus		63,456 / 258,120	=	0.25	25%
Liquidity Ratio	=	Current Asset / Current Liability			
		133,000 / 15,550	=	8.55	
Solvency ratio	=	Total Assets / Total Liability			
		973,000 / 306,318	=	3.18	

Question 3

	Current age	How many years to 18	Current			FV at 18
			Tuition fees	Living costs	Total	
Danial	6	12	240,000	200,000	440,000	790,177
Mariah	9	9	240,000	200,000	440,000	682,584

Note: Assume inflation rate of 5% p.a.

Assume that the required rate of return is 7% per annum and the monthly instalments are done at the end of every month, use the Future value of an Annuity formula and solve for PMT

$$\text{Future Value of an Ordinary Annuity} = \text{PMT}\left[\frac{[(1+i)^n - 1)}{i}\right]$$

Danial

Substitute : FV = 790,177 n = 144 i = 0.5833% PV = 0 Solve for PMT = RM3,516.67

Mariah

Substitute : FV = 682,584 n = 108 i = 0.5833% PV = 0 Solve for PMT = RM4.554.84

It is estimated that they need to save = 3,516.67 + 4,554.84 = RM8,071.51 per month (or RM96,858 per annum) from now to finance their children's education

Answers may vary depending on the assumptions for the inflation rate and rate of return on investment.

(Note: The current unit trust and share holdings can be used to defray some of the cost unless it has been earmarked for some other goal e.g. Omar and Siti's retirement)

For instance:

If Omar's Unit Trust and Shares (Current Value = RM38,000 are used for Danial and Siti's Unit Trust and Shares (Current Value = RM45,000) are used for Mariah. Assuming expected rate of return = 7%.

Danial

Future value of Omar's Unit Trust and Shares in 12 years' time = $38,000\ (1+0.07)^{12}$ = RM85,583

Future shortfall in Danial's education = 790,177 – 85,583 = RM704,594

Use ordinary annuity formula:

Substitute: FV = 704,594 n=144 i= 0.5833 % PV = 0 Solve for PMT = RM3,135

Mariah

Future value of Siti's Unit Trust and Shares in 9 years' time = $45,000\ (1+0.07)^{9}$ = RM82,730

Future shortfall in Mariah's education = 682,584 – 82,730 = RM599,854

Use ordinary annuity formula:

Substitute: FV = 599,854 n=108 i= 0.5833 % PV = 0 Solve for PMT = RM4,002

In this case, it is estimated that they need to save = 3,135 + 4,002 = RM7,137per month (or RM85,644 per annum) from now to finance their children's education

Question 4

Answers may vary, but should contain some of the following points:

- Moses and Sally's total savings (savings and fixed deposits) for emergencies = RM10,000 + RM40,000 = RM50,000. This is less than 6 months of their living expenses.
- Consider alternatives on spending for example going on local holidays rather than overseas trip, having a part-time maid instead of a live-in maid etc., consider needs rather than wants in making purchases.
- Moses and Sally should encourage their children to study hard and to excel in their studies so they can qualify for corporate and/or university scholarships to defray some of the cost.
- They could buy education insurance policies for Jonathan and Esther.
- Any other relevant answers