

**INSTITUTE OF BANKERS IN MALAWI**

**DIPLOMA IN BANKING EXAMINATION**

**SUBJECT: FINANCIAL CONCEPTS A (OIBM-D206)**

**Date: Monday, 13th May 2019**

**Time Allocated: 3 hours (08:00 – 11:00 Hours)**

**INSTRUCTIONS TO CANDIDATES**

1 This paper consists of **TWO** Sections, A and B.

2 Section A consists of 4 questions, each question carries 15 marks.

Answer **ALL** questions.

3 Section B consists of 4 questions, each question carries 20 marks. Answer **ANY TWO** questions.

4 You will be allowed **10 minutes** to go through the paper before the start of the examination, you may write on this paper but not in the answer book.

5 Begin each answer on a new page.

6 **Please write your examination number on each answer book used. Answer books without examination numbers will not be marked.**

7 All persons writing examinations without payment will risk expulsion from the Institute.

8 If you are caught cheating, you will be automatically disqualified in all subjects seated this semester.

9 DO NOT open this question paper until instructed to do so.

**SECTION A (60 MARKS)**

Answer **ALL** questions from this section

**QUESTION 1**

1. As a student studying Financial Concepts A, throughout the course you have met the terms listed below, you are therefore required to briefly explain each term: -
2. Future Value
3. A single amount cash flow
4. Compounding interest
5. Present Value
6. Ordinary annuity
7. Continuous Compounding Interest
8. Nominal annual rate *(7 marks)*
9. Ms. Yafewa Jiya feels that the cash flow from a property will enable her to pay a lender MWK 15,000,000 per year, at the end of every year, for 10 years. How much should the lender be willing to loan her if he requires a 9% annual interest rate (annually compounded, assuming the first of the 10 equal payments arrives one year from the date the loan is disbursed)? *(8 marks)*

**(Total 15 marks)**

**QUESTION 2**

1. What is a sinking fund? *(3 marks)*
2. Suppose you deposit MWK 900.00 per month into an account that pays 4.8% interest, compounded monthly.

How much money will you have after 9 months?

**Hint: use the following formula for future value for Sinking fund**

 *(12 marks)*

**(Total 15 marks)**

**QUESTION 3**

1. What is the present value of an offer of MWK 14,000 one year from now if the opportunity cost of capital (discount rate) is 11% per year nominal annual rate compounded monthly? *(5 marks)*
2. What is the future value of MWK 20,000 which grows at a nominal annual interest rate of 12% per year, compounded monthly, for two years? *(5 marks)*

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1. What is the effective annual rate (EAR) of 8% simple nominal annual rate when compounded monthly? *(5 marks)*

(Total 15 marks)

**QUESTION 4**

1. What is meant by the term “mutually exclusive projects”? *(2 marks)*
2. Explain why the IRR decision rule could give the wrong result when comparing mutually exclusive projects. *(3 marks)*
3. The following net cash flows relate to two projects:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | NET CASH FLOWS (IN MWK 1,000) | | | | | | |
| YEAR  PROJECT A  PROJECT B | 0  -60  -72 | 1  20  45 | 2  20  22 | 3  20  20 | 4  20  13 | 5  20  13 | 6  20  13 |

**Required**

1. Calculate the NPVs for each project, assuming 10% cost of capital. *(5 marks)*
2. Assuming that the two projects are independent, would you accept them if the cost of capital is 15%? *(2 marks)*
3. What is the IRR of each project? *(2 marks)*
4. Which of the two projects would you prefer if they are mutually exclusive, given a 15% discount rate? (1 mark)

**(Total** **15 Marks)**

**SECTION B (40 MARKS)**

Answer ANY **TWO** questions from this section

**QUESTION 5**

The annually compounded discount rate is 5.5%.

You are asked to calculate the present value of a 12-year annuity with payments of MWK 50,000 per year. Calculate PV for each of the following cases.

**Required**

1. The annuity payments arrive at one-year intervals. The first payment arrives one

year from now. *(8 marks)*

1. The first payment arrives in 6 months. Following payments arrive at one-year

intervals, at 18 months, 30 months, etc. *(12 marks)*

**(Total 20 marks)**

**QUESTION 6**

You are considering buying a two bedroom apartment in Namiwawa for MWK 600,000,000. You plan to make a MWK100, 000,000 down payments and take out a MWK 500,000,000 30-year mortgage for the rest.

The interest rate on the mortgage is 8.5% monthly APR.

**Required**

1. What is the effective annual rate (EAR)? *(5 marks)*
2. What is the monthly payment? *(5 marks)*
3. How much do you owe the bank immediately after the 60th monthly payment?

*(10 marks)*

**(Total 20 marks)**

**QUESTION 7**

You want to set up an education account for your child and would like to have $75,000 after 15 years. You find an account that pays 5.6% interest, compounded semiannually, and you would like to deposit money in the account every six months. How large must each deposit be in order to reach your goal?

Hint use the following formula for Sinking Fund.

 **(Total 20 marks)**

**QUESTION 8**

1. Under what conditions does the Effective Annual Rate of Interest (EAR) differ from the annual; percentage rate (APR)? *(5 marks)*
2. As the frequency of compounding increases within the annual period, what happens to the relation between the EAR and the APR? *(5 marks)*
3. If interest is paid at a rate of 5% per year, compounded quarterly, what is the:
4. Annual percentage rate? *(5 marks)*
5. Effective annual rate? *(5 marks)*

(**Total 20 marks)**

**END OF EXAMINATION PAPER**