

**INSTITUTE OF BANKERS IN MALAWI**

**ADVANCED DIPLOMA IN BANKING EXAMINATION**

**SUBJECT: FINANCIAL ECONOMICS (IOBM – AD301)**

**Date: Thursday, 15th November 2018**

**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. Discuss the **three** primary shapes of yield curves. *(6 marks)*
2. Explain any two common uses of sinking funds**.** *(4 marks)*

1. XYZ Ltd borrowed money amounting to MK30000 over four years at 15% compounded annually. If the money can be invested at 10%, calculate the annual payment into the sinking fund. *(5 marks)*

**(Total 15 marks)**

**QUESTION 2**

1. Stating the assumptions made, explain the Quantity Theory of Money as propounded by the classical economists. *(2 marks)*
2. Assume money supply () and the product of Price level and Transactions () have been growing as shown by Table 1.

**Table1: Money Supply and the Product of Price Level and Transactions.**

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR** | **2016** | **2017** | **2018** |
| (in billions MK) | MK100 | MK110 | MK121 |
| (in billions MK) | MK1000 | MK1200 | MK1440 |

**Required:**

1. Calculate the velocity of money in each year. *(6 marks)*
2. Determine the rate at which velocity is growing**.** *(3 marks)*
3. If the velocity and the level of transactions remain at 5 and MK1000 billion respectively, show what happens to the price level when the supply of money increases from MK100 billion to MK121 billion**.** *(4 marks)*

**(Total 15 marks)**

**QUESTION 3**

1. With the aid of a clearly labelled diagram, explain the fundamental principle of the classical theory as propounded by the classical economists. *(6 marks)*
2. ‘In the classical theory of interest rate adjustment in the money market, the aggregate saving curve is an upward sloping function of the interest rate while the aggregate investment curve is a downward sloping function of the interest rate’.

**Required:**

1. Explain the reason as to why the aggregate saving curve is an upward sloping function of the interest rate. *(3 marks)*
2. Explain the reason as to why the aggregate investment curve is a downward sloping function of the interest rate. *(3 marks)*
3. Assume the money market is in initial equilibrium at point **E.** With the use of a clearly labelled diagram, explain what happens in the economy when the aggregate saving declines.  *(3 marks)*

**(Total 15 marks)**

**QUESTION 4**

1. Explain **any two** components of the compound interest. *(4 marks)*
2. An entrepreneur negotiates a loan of MK10, 000 with 5 percent interest rate compounded 6-monthly and is amortised by equal semi-payment over the next 4 years.

**Required:**

1. Calculate the value of each payment necessary to amortize the debt**.** *(5 marks)*
2. Construct an amortization schedule for the loan. *(6 marks)*

**(Total 15 marks)**

**SECTION B (40 MARKS)**

Answer ANY **TWO** questions from this section

**QUESTION 5**

1. With an aid of an example, differentiate between correlation and regression.

*(4 marks)*

1. State how you can conduct test of significance using the p-value approach.

*(4 marks)*

1. Study Table 2 and answer the questions that follow:

**Table 2: Demand and Price Relationship of a Security**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Price of security | 2 | 4 | 6 | 8 | 12 | 20 |
| Quantity demanded of security | 100 | 95 | 80 | 82 | 74 | 60 |

**Required:**

Develop the estimated regression equation for the data using price of an asset as a dependent variable. *(12 marks)*

**(Total 20 marks)**

**QUESTION 6**

1. Table 3 shows the possible returns and associated probabilities of securities A and B. Use it to answer the questions that follow:

**Table 3: Possible Returns and Associated Probabilities of Securities A and B.**

|  |  |  |
| --- | --- | --- |
| **Rate of Return** | **Probability of A** | **Probability of B** |
| 8.0% | 40% | 11% |
| 12.0% | 11% | 12% |
| 13.5% | 30% | 40% |
| 16.5% | 12% | 7% |
| 17% | 7% | 30% |

**Required:**

1. Calculate the mean return of security A. *(3 marks)*
2. Calculate the mean return of security B. *(3 marks)*
3. Calculate the standard deviation of security A. *(4 marks)*
4. Calculate the standard deviation of security B. *(4 marks)*
5. Using the above findings, explain which security is risky. *(2 marks)*
6. According to Markowitz (1992), explain how an investor can obtain a risk and return that is better than can be obtained by holding only on type of asset? *(4 marks)*

**(Total 20 marks)**

**QUESTION 7**

1. Briefly, explain the effects of inflation on capital investment decision.

*(2 marks)*

1. Differentiate between real price of goods and the nominal price of goods. *(2 marks)*

1. Assume the real return on an investment is 20 percent and inflation is expected to be 10 percent. Using the Fisher equation, calculate the nominal rate of return.

*(5 marks)*

1. ABC Ltd is evaluating a proposal to begin at a new location. The real cash flows in thousands Malawi Kwacha are as shown in Table 4.

**Table 4: Cash Flows for ABC Ltd.**

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR 0** | **YEAR1** | **YEAR2** | **YEAR3** |
| -4000 | 1000 | 1800 | 2600 |

The real cost of capital is 10 percent.

**Required:**

1. Calculate the Net Present Value for the proposal. *(5 marks)*
2. Suppose the expectations are that inflation will certainly be 5 percent. Calculate the Net Present Value of the proposal. *(6 marks)*

**(Total 20 marks)**

**QUESTION 8**

1. Differentiate between annuity and a perpetuity. *(2 marks)*
2. Calculate the present value of an ordinary perpetuity of US$80 million per annum at 10 percent effective interest rate. *(5 marks)*
3. Given a perpetuity due with a present value of US$80 million and payments of US$8 million per annum. Calculate the annual effective interest rate of the perpetuity due.

*(6 marks)*

1. An investor is contemplating of investing in government securities such as treasury bills. He settles for a one-year treasury bill which pays a par value of K10, 000 and its current purchase price is K8, 000.

**Required**

Calculate the yield to maturity for the treasury bill?*(7 marks)*

**(Total 20 marks)**

**END OF EXAMINATION PAPER**