



OBAFEMI AWOLOWO UNIVERSITY

FACULTY OF ENVIRONMENTAL DESIGN AND MANAGEMENT

DEPARTMENT OF ESTATE MANAGEMENT

2010/2011 HARMATTAN SEMESTER EXAMINATION

COURSE TITLE: ESM 501-Advanced Valuation 3

TIME ALLOWED: 2HRS,30MINS

INSTRUCTION: Answer **Four** questions **only**, **two** questions from each section

**Section A**

1. Appraise these two Projects using (i) the Net Present Value discounting both at 10% and (ii) internal rate of return (IRR) method discounting Project A at 13% and Project B at 15%. Explain and compare your findings.

	Project A	Project B
Year	Net Cash Flow (#)	Net Cash Flow (#)
0	-18,640	-12,000
1	+2,000	+1,000
2	+7,000	+5,000
3	+9,000	+7,000
4	+5,000	+3,000
5	+4,000	+2,000 (15 marks)

2. Two investment opportunities are available both requiring an initial capital outlay of #2,000,000. Income from the investments is as follows:

**Investment A.** #500,000 p.a for the first 4 years, #600,000 for the following 6 years

**Investment B.** #200,000 p.a for the first 4 years, #1,200,000 p.a for the following 6 years

- (i) Appraise the investments using, the payback criterion, and the Accounting Rate of Return (10 marks)
- (ii) Discuss the relative merits and demerits of the two techniques (5 marks)



## Section B

### Question 1

You are considering purchasing an asset into a well diversified portfolio. The asset is offered for sale at a required return (equated yield or money weighted rate of return) of 13%. Assume the risk free rate of return to be 7%.

The returns for the past five years are as follows:

	Returns (%)				
	2006	2007	2008	2009	2010
Asset being considered	20.00	15.00	13.00	9.00	14.25
Existing Portfolio (Weighted average of individual asset returns)	27.88	16.66	12.25	8.11	7.40

$$C_{am} = 0.9$$

Determine the beta, the expected asset return and the alpha and depict these on a securities market line graph (15 marks)

### Question 3

Briefly explain the following terms (with appropriate formulae where necessary)

- Portfolio diversification
- Efficient frontier
- The super efficient portfolio
- Capital allocation lines and the capital market line
- Systematic risk and specific risk
- Alpha
- Beta
- CAPM
- Arbitrage Pricing Theory
- Test of adequate profitability (15 marks)

Question 3

Assume you have ascertained the following information in respect to the valuation of a factory

The factory premises comprises of buildings; plant and machinery on a 20 hectare site (cost per hectare is ₦300,000). The buildings are 4 single storey workshops with a gross floor area of 500m<sup>2</sup> each and 3 single storey warehouses of gross floor area of 500m<sup>2</sup> each. Comparable workshops and warehouses can be built for ₦ 500/m<sup>2</sup> and ₦ 520/m<sup>2</sup> respectively. You have inquired from relevant plant manufacturers in Britain and have been given the following current machinery costs for the plastics plant.

	£
1. process vessels and pumps	100,000
2. transportation and installation	20,000
3. instruments and controls	30,000
4. electrical works	10,000
5. civil works	16,000
6. plant designer and engineers fees	5,000
7. cost of finance	<u>10,000</u>
	<u>191,000</u>

Added to the above are import duty and port charges £38,200.

The plant was constructed live years ago at a historic cost of £120,000. Most plant of this type are reckoned to have a working life of 65 years. The remaining useful life of the plant is 60 years out of the life span of 65 years. The plant construction period would be two years. Take the exchange rate at ₦250 to the pound. Adopt estimated percentage depreciation for the physical plant deterioration. Assume there is no functional obsolescence, but that there is no economic obsolescence.

Other machinery such as vehicles, generators, typewriters, computer, furniture etc have recently been valued by BBO valuers using DRC at ₦600,000.

You have extracted the following information from the books of accounts of the company for the year ended December last year.

Stock of raw materials	₦75,000.00
Stock of finished products	₦ 75,000.00
Cash in hand	₦ 20,000.00
Cash in the bank	₦ 40,000.00
Sundry debtors	₦ 5,000.00