



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA**  
**FACULTY OF MANAGEMENT SCIENCES**  
**DEPARTMENT OF FINANCIAL STUDIES**  
**2020\_1 EXAMINATION**

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**COURSE CODE: MBF843**

**CREDIT UNIT: 3**

**COURSE TITLE: Capital Investment and Financial Decisions**

**TIME ALLOWED: 2<sup>1</sup>/<sub>2</sub>HRS**

**INSTRUCTIONS:**

- 1. Attempt Question One (1) and any other three (3) questions**
  - 2. Question 1 carries 25 marks, while the other questions carry 15 marks each**
  - 3. Present all points in coherent and orderly manner**
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**QUESTION 1**

- (a) On what parameters can you classify investment? **(6 marks)**
- (b) Akpafa, Magongo Construction Company Ltd is about to decide which type of Tractor to buy, of the two types available, Grader and Payloader. Grader costs ₦25m and the net annual income for the first three years of its life will be ₦7.5m, ₦10m and ₦12.5m respectively. At the end of three years, it will be scrapped for ₦5m. To buy a Grader, the company would need to borrow from a Finance Group at 10% interest. Payloader will be bought for ₦15m on credit from its manufacturer at an interest of 7%. It is expected to yield an annual cash flow of ₦7.5m per annum for three years after which it will have a nil scrap value.

**Required:**

Evaluate the above investment projects using the Net present value criterion and indicate which investment would be the more profitable to invest in.

**(10 marks)**

- (c) Weyo Efan Manufacturing company is considering three machineries which have the following cashflows:

Year	Machinery A	Machinery B	Machinery C
	N <sup>2</sup> m	N <sup>2</sup> m	N <sup>2</sup> m
0	(50)	(50)	(50)
1	10	15	20
2	15	25	25
3	25	30	30
4	50	30	45

**Required:** Calculate the payback periods for each project and advise Weyo Efan company on which of the three projects to invest in.

**Marks = 5 Marks**

(d)

Eben Ededa Ltd. is considering investment in one of these projects – A and B, each having a life span of 4 years and no residual value.

Year	Project A	Project B
	N <sup>2</sup> 000	N <sup>2</sup> 000
0	(52,000)	(70,000)
1	24,000	21,000
2	18,000	22,500
3	19,500	24,000
4	21,000	25,500

The Net cash flows were arrived at after deducting depreciation and tax.

**Required**

Using the Accounting Rate of Return on average capital employed, present necessary calculations to show whether the above projects, A and B are acceptable to the company or not.

An acceptable rate should not be less than 15%. ( 4 marks)

**Total = 25marks**

## Question 2

- (a) Onini Ltd. has a cost of capital of 10% and has a limit of ₦10,000,000 available for investment in the current period. Capital is expected to be

freely available in future periods. The following indivisible projects are being considered.

Projects	Initial Investment	N P V at 10%
<b>F</b>	<b>₦ 3,500,000</b>	<b>₦ 1,750,000</b>
<b>G</b>	<b>4,000,000</b>	<b>2,250,000</b>
<b>H</b>	<b>6,500,000</b>	<b>3,800,000</b>
<b>I</b>	<b>4,800,000</b>	<b>3,150,000</b>
<b>J</b>	<b>2,300,000</b>	<b>900,000</b>

**Required:**

Calculate the optimal investment plan:

- Where there are no alternative investments available for any surplus funds
- Where each ₦1,000 surplus funds can be invested to produce 12% perpetuity. **(15 marks)**

**QUESTION 3**

Mosirun Nig. Ltd is considering a major investment in a new productive process. The total cost of the investment has been estimated to be N3m but if this is increased to N4.5m, the productive capacity could be substantially increased. Due to the nature of the process, once the basic plant has been established, to increase its capacity at a future date is exceptionally costly. One of the problems facing management is that the demand for process output is very uncertain. However, the Market Research and Finance departments have been able to produce the following first estimates.

Investment A (₦ 4.5m)		Investment B (₦3m)	
Demand Probability	Annual Net Cash Inflow (₦4.3m)	Demand Probability	Annual Net Cash Inflow (₦3m)
0.3 yrs 1 – 4	1.5	0.4 yrs 1 – 4	0.9
5– 10	1.05	5– 10	0.75
0.5 yrs 1 – 4	1.2	0.4 yrs 1 – 4	0.9
5–10	0.6	5–10	0.75
0.2 yrs 1 – 10	0.15	0.2 yrs 1 – 10	0.3
Cost of Capital	15%	Cost of Capital	15%

You are required to prepare a statement, which clearly indicates the financial implications of each of the projects. Advise the company on better the investment. **(15 marks)**

#### QUESTION 4

(a)

Adedolapo Ltd has been looking for a suitable investment which will give a target internal rate of return of 17 to 20%. An investment adviser has offered the company a project, the details of which are given below: Initial investment outlay involving the purchase of machinery for ₦18m. The plant can produce 150,000 cartons of pineapple squash per annum, during the first two years, rising to 200,000 cartons per annum, for the next three years. Cost of production of each carton, excluding depreciation costs is ₦210 per unit and the selling price per unit will be ₦270. The plant will be scrapped at the end of the 5<sup>th</sup> year and is expected to have a scrap value of ₦500,000.

**You are required to calculate the actual internal rate of return of the above project.**

**Ignore the effect of taxation. (11 marks)**

(b) What are the features of investments? **(4 Marks)**

**Total = 15marks**

#### Question 5

Osanimu Ltd is considering five different investment projects. The company's cost of capital is 12%. Data on these projects under consideration are given below:

	Investment	PV at	NPV		Profitability
Project	₦	12%	₦	IRR	Index
A	17,500,000	19,600,000	2,100,000	16	1.12
B	10,000,000	11,400,00	1,400,000	15	1.14
C	12,500,000	13,625,000	1,125,000	14	1.09
D	5,000,000	5,400,000	400,000	18	1.08
E	4,500,000	4,365,000	(135,000)	11	0.97

#### Required:

- Rank the above five projects in descending order of preference, according to:  
NPV, IRR and profitability index. **(6 marks)**
- Which ranking would you prefer? **(3marks)**

(iii) Based on your answer in part 2, which projects would you select if N27.5m is

the limit to be spent? . **(6 marks)**

**Total = 15 marks**

**Question 6**

- (a) Distinguish investment from speculation. **(5 marks)**
- (b) Distinguish between money rate of discount and real discount rate. **(3 marks)**
- (c) State three advantages and disadvantages of Payback period method of discounting investment projects. **(3 marks)**
- (d) State and briefly explain the basic types of decisions. **(5 marks)**

**Total = 15 marks**