Assignment 02: Due date 04 September 2015 Compulsory

Unique nr: 594295
Marks weight: 20%

ASSIGNMENT 02 - SEMESTER 1

ASSIGNMENT 02	
Due date	04 September 2015
Study material	Hughes & Cotterell: Chapters 2
Total marks	32 marks = 100%
If your assignment is late, please DO NOT PHONE OR E-MAIL asking for an extension but include a note in your assignment stating the reason for the late submission and we will decide whether or not it will be marked.	

Instructions:

1. Complete this assignment and submit online in a .pdf format by performing the calculations.

2. The following unique number has to be assigned to the assignment:

UNIQUE NUMBER:
594295

3. Show all your working (calculations).

4. This assignment consists of 5 questions.

QUESTIONS FOR ASSIGNMENT 02:

The cash flows of Projects 1 and 2 are given in the table below (in ZAR, South African rand, R):

Year	Project 1	Project 2
0	-R155000	-R140000
1	-R5000	R15000
2	R40000	R5000
3	R50000	R20000
4	R50000	R30000
5	R50000	R60000
6	R30000	R70000

Table of cash flows for Project 1 and 2

Use this information to calculate the **Net Profit**, the **Return on Investment** (ROI), the **payback period** and the **Net Present Value** at 10% for <u>each</u> of these projects. Then answer Questions 1 – 5.

1. Calculate the Net Profit for each project. (6 marks)

    Project 1:
    Answer

    Net profit is the difference between the total costs and the total income over the life of the project.
    ((-155 000) + (-5 000) + 40 000 + 50 000 + 50 000 + 50 000 + 30 000) = **R60 000**

Project 2:
Answer

Net profit is the difference between the total costs and the total income over the life of the project.
((-140 000) + 15 000 + 5 000 + 20 000 + 30 000 + 60 000 + 70 000) = **R60 000**

Additional information about net profit:
*   advantage as method for comparing projects – simple to calculate*
*   disadvantage as method for comparing projects – takes no account of timing of cash flows*

2. Calculate the Return on Investment for each project. (6 marks)

Project 1:
Answer

Return on Investment (ROI), also called Accounting Rate of Return (ARR), provides a way of comparing the net profitability to the investment required.

ROI = average annual profit x 100
                total investment

    = 60000/6 x 100
       160 000

    = 10 000   x 100
       160 000
    = 6.25%

However, the following may also be marked as correct solution, on the assumption that the -R5000 is a loss made in the 1ˢᵗ year and NOT an investment:
        = 60000/6 x 100
           155 000

        = 10 000   x 100
           155 000
        = 6.45%

Project 2:
Answer

ROI = average annual profit x 100
                total investment

    = 60000/6 x 100
       140 000

    = 10 000   x 100
       140 000

    = **7.14%**

3. Calculate the Payback Period for each project. (6 marks)

Project 1:
Answer = (i.e., 4 + (20000/50000) = 4.4 yrs) OR (5 - (30000/50000) = 4.4 yrs)

Payback is the time taken to break even or pay back the initial investment

Year	Project 1	Calculations for pay back period	
0	-R155 000	- R155 000	
1	-R5 000	(- R155 000) + (- 5 000) = - 160 000	
2	R40 000	(-160 000) + 40 000	= - 120 000
3	R50 000	(-120 000) + 50 000	= - 70 000
4	R50 000	(- 70 000) + 50 000	= - 20 000
5	**R50 000**	**(- 20 000) + 50 000**	**= 30 000**

Project 2:
Answer = (i.e., 5 + (10000/70000) = 5.14 yrs) OR (6 - (60000/70000) = 5.14 yrs)

Payback is the time taken to break even or pay back the initial investment

Year	Project 1	Calculations for paid back period	
0	-R140 000	- R140 000	
1	R15 000	(- R140 000) + 15 000 = - 125 000	
2	R5 000	(-125 000) + 5 000	= - 120 000
3	R20 000	(-120 000) + 20 000	= - 100 000
4	R30 000	(- 100 000) + 30 000	= - 70 000
5	R60 000	(- 70 000) + 60 000	= - 10 000
6	**R70 000**	**(- 10 000) + 70 000**	**= 60 000**

Additional information about payback period:

> *advantage as method for comparing projects -* *simple to calculate*
> - *not so sensitive to small forecasting errors*
>
> *disadvantage as method for comparing projects – ignores overall profitability of project (ignores any income or expenditure once project has broken even)*

4. Calculate the Net Present Value for each project. (12 marks)

Note: the *Table of NPV Discount Factors* is available in the prescribed text book.

Project 1:
Answer

Year	Project 1	Discount Factor at 10%	Discounted cash flow (R)
0	-R155 000	1.00	-155 000
1	-R5 000	0.909	-4 545
2	R40 000	0.826	33 040
3	R50 000	0.751	37 550
4	R50 000	0.683	34 150
5	R50 000	0.621	31 050
6	R30 000	0.564	16 920
NPV			**-6 835**

Project 2:
Answer

Year	Project 2	Discount Factor at 10%	Discounted cash flow (R)
0	-R140 000	1.00	-140 000
1	R15 000	0.909	13 635
2	R5 000	0.826	4 130
3	R20 000	0.751	15 020
4	R30 000	0.683	20 490
5	R60 000	0.621	37 260
6	R70 000	0.564	39 480
NPV			**- 9 985**

5. Based on your calculation of the individual Return on Investment (ROI) of each project in question 2 above, which project would you select to develop? (2 marks)

Answer = Project 2: (Project 2 has a higher ROI (7.14%) than Project 1 (6.25%))