UGANDA MARTYRS UNIVERSITY, MBALE CAMPUS
UNIVERSITY EXAMINATIONS

FACULTY OF BUSINESS ADMINISTRATION AND MANAGEMENT

END OF SEMESTER FINAL ASESSMENT

CORPORATE FINANCE I

DATE: May, 2018

TIME ALLOWED: 3 hours: 9.00am – 12.00 noon

Instructions to Candidates:

Read the following before answering the questions

1. *Carefully read through ALL the questions before attempting*
2. ***ANSWER FOUR (4) Questions*** *(All questions carry equal marks)*
3. *No **names** should be written anywhere on the examination book.*
4. *Ensure that your **Reg. number** is indicated on all pages of the examination answer booklet.*
5. *Ensure your work is **clear** and **readable**. Untidy work shall be penalized*
6. *Any type of examination Malpractice will lead to automatic disqualification*
7. *Do not write anything on the questions paper.*

QUESTION 1

(i) Explain the term "agency problem" and what steps might the owners (shareholders) take to overcome it. **[10 marks]**

(ii) Discuss the three basic decisions addressed by Corporate Finance. **[9 marks]**

(iii) Write short notes on the following:

(a) Intrinsic value **[2 marks]**

(b) Face value **[2 marks]**

(c) Market value **[2 marks]**

QUESTION 3

(a) The cost of a plant is Shs. 500,000. It has an estimated life of 5 years after which it would be disposed off (scrap value nil). Profit before depreciation, interest and taxes (PBIT) is estimated to be Ushs. 175,000 p.a and the Tax rate is 30%.

Required: Find out the yearly cash flow from the plant. **[10 marks]**

(b) A cosmetic company is considering introducing a new lotion. The manufacturing equipment will cost Shs. 560,000. The expected life of the equipment is 8 years. The company is thinking of selling the lotion in a single standard pack of 50 grams at Ushs. 12 each pack. It is estimated that variable cost per pack would be Ushs. 6 and annual fixed cost Ushs. 450,000. Fixed cost includes (straight line) depreciation of Ushs. 70,000 and allocated overheads of Ushs. 30,000. The company expects to sell 100,000 packs of the lotion each year.

Required: Assume that tax is 45% and straight line depreciation is allowed for tax purpose. Calculate the cash flows. **[15 marks]**

QUESTION 3

(a) Assume that you deposit Ushs. 10,000 today into an account paying 6% annual interest and leave it on deposit for exactly 8 years. How much will be in the account at the end of 8 years if interest is compounded:

(i) Annually? **[4 marks]**

(ii) Semiannually? **[4 marks]**

(iii) Monthly? **[4 marks]**

(iv) Continuously? **[4 marks]**

(b) Suppose a land owner receives annual royalty payments of Ushs. 2,000, Ushs. 2,200, Ushs. 1,900, Ushs. 2,500 and Ushs. 1,500 over next five years. Calculate the present worth of these payments at an interest (discount) rate of 8%. **[9 marks]**

QUESTION 4

a) Define the term "working capital" and briefly explain the determinants of working capital of a firm. **[9 marks]**

b) The sales and working capital figures of Odere Ltd. for a period of 5 years are given as follows:

Year	**Sales**	**Working capital**
2003 - 2004	60,000	12,000
2004 - 2005	80,000	15,000
2005 – 2006	120,000	20,000
2006 – 2007	130,000	21,000
2007- 2008	160,000	23,000

Required: Forecast the working capital requirements for 2008 – 2009 taking the estimated sales of Shs. 200,000 **[16 marks]**

QUESTION 5

(i) Write short notes on the following

(a) Risk **[3 marks]**

(b) Uncertainty **[3 marks]**

(c) Risk-adjusted discount rate **[3 marks]**

(ii) The table below shows the information on two projects for Snowball Ltd.

State of the economy	Probability of the outcome	Cash flow	
		A	**B**
Strong	0.2	700	550
Normal	0.5	400	400
Weak	0.3	200	300

Required:

As a new graduate from Uganda Martyrs University, specializing in Finance, you are required to advise Management of Snowball Ltd about the acceptability of the projects based on:

(a) the expected value for each of the projects **[4 marks]**
(b) the variance for each of the projects **[4 marks]**
(c) the standard deviation for each of the projects **[4 marks]**
(d) the co-efficient of variation for each of the projects **[4 marks]**

QUESTION 6

(i) A loan of Shs. 50,000 is to be repaid by equal annual installment payments of principal and interest over a period of 5 years. If the interest is 8% effective find:

(a) The annual payment **[3 marks]**
(b) The principal outstanding at the beginning of the 3rd year **[3 marks]**
(c) The principal repaid till the beginning of the 3rd year **[3 marks]**
(d) Total interest paid. **[3 marks]**

(ii) Machinery is purchased at a cost of Ushs. 550,000 and is expected to rise in cost at 15% per annum, compound interest, and depreciate in value at a rate of 8% per annum compounded annually. A sinking fund is started to make provision for replacing the old machine. The sinking fund pays 16% per annum compounded monthly, and monthly payments into this account are made for 10 years, starting immediately and ending one month before the purchase of the new machine.

Determine:

a) The replacement cost of a new machine ten years from now. **[5 marks]**
b) The scrap value of the machine in ten years' time. **[3 marks]**

c) The monthly payment into the sinking fund that will make provision for the replacement of the new machine. **[5 marks]**

FORMULA SHEET

1. $FV = PV\ (1 + r)^n$

2. $$PV = \frac{FV}{(1+i)^n}$$

3. $$PV = \sum_{t=0}^{n} \frac{FV_t}{(1+i)^t}$$

4. $$PVGP = \frac{A}{(i-g)}$$

5. $$PV(P) = \frac{A}{i}$$

6. $$FV\ of\ Annuity = P\left[\frac{(1+r)^n - 1}{r}\right]$$

$P = Periodic\ Payment$

$r = rate\ per\ period$

$n = number\ of\ periods$

$$FV_{OA} = A\left[\frac{\left(1+\frac{r}{m}\right)^{mT} - 1}{\frac{r}{m}}\right]$$

Where:

FV = Future value of Ordinary Annuity

r = Annual interest rate

T = Number of years

m = Number of periods based on compounding frequency

7. $$FV(A) = A \cdot \frac{(1+i)^n - (1+g)^n}{i-g}$$

$$\mathrm{NPV} = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_o$$

8. $$\mathrm{PVA} = \mathrm{PMT}\left[\frac{1-\left(1+\frac{r_{nom}}{m}\right)^{-mt}}{\frac{r_{nom}}{m}}\right]$$

9. $$PV\ of\ Annuity = P\left[\frac{1-(1+r)^{-n}}{r}\right]$$

$$A = P\frac{r(1+r)^n}{(1+r)^n - 1}$$

10. $$A\left(\frac{1-(1+i)^{-(k-n+1)}}{i}\right)$$

11.

$$FV\ of\ Annuity = P\left[\frac{(1+r)^n - 1}{r}\right]$$

$P = Periodic\ Payment$
$r = rate\ per\ period$
$n = number\ of\ periods$

12.

$$FV\ of\ Annuity\ Due = (1+r) \times P\left[\frac{(1+r)^n - 1}{r}\right]$$

$P = Periodic\ Payment$
$r = rate\ per\ period$
$n = number\ of\ periods$

13. Original loan amount = $A = \frac{P}{i}\left[1-(1+i)^{-N}\right]$

14.

$$FV = PV(1+r)^n - P\left[\frac{(1+r)^n - 1}{r}\right]$$

$FV = Future\ Value(Remaining\ Balance)$
$PV = Present\ Value(Original\ Balance)$
$P = Payment$
$r = rate\ per\ payment$
$n = number\ of\ payments$

$$\text{Standard Deviation}_{population} = \sigma = \sqrt{\sum_{i=1}^{N}\frac{(x_i-\mu)^2}{N}}$$

$$\text{Standard Deviation}_{sample} = S = \sqrt{\sum_{i=1}^{n}\frac{(x_i-\bar{x})^2}{n-1}}$$

$$\text{Var}(R) = \sigma_R^2 = \sum_{i=1}^{n} \left(p_i \times \left[R_i - E(R) \right]^2 \right)$$

$$\text{Coefficient of Variation} = \frac{\sigma}{\mu} \times 100$$

$$y = a + bx$$

Where, y = Working capital (dependent variable)
a = Intercept of the least square
b = Slope of the regression line
x = Sales (independent variable)

For determining the values 'a' and 'b' two normal equations are used which can be solved simultaneously :

$$\sum y = na + b\sum x$$
$$\sum xy = a\sum x + b\sum x^2$$