

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

CHAL 415: CHEMICAL PROCESS ECONOMICS

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 20/09/2021

8.30 A.M – 10.30 A.M

INSTRUCTIONS

■ Answer question one and any other two questions

QUESTION ONE (30 MARKS)

- (a) Briefly explain the following terms. [6 marks]
- (i) retained earnings
 - (ii) Reserves
 - (iii) Intermediate debt
- (b) (i) Define cost accounting [2 marks]
- (ii) Give three concerns of cost accounting. [3 marks]
- (c) Explain the following terms with respect to cost accounting. [6 marks]
- (i) Cost object or cost unit
 - (ii) Cost analysis
 - (iii) Cost benefit approach
- (d) Define the following terms: [4 marks]
- (i) Prime cost
 - (ii) Variable cost
 - (iii) Direct costs
 - (iv) Fixed costs
- (e) (i) Define the Turn Over Ratio (TOR) [1 mark]

(ii) Estimate the fixed capital investment for a 1500 ton/day ammonia plant using the turnover ratio. If the current gross selling price of ammonia is ksh 150/ton. The plant is operating ratio at a 95% stream time. Take the TOR for ammonia = 0.65. [5 marks]

(f) Discuss three factors determining the prices for raw materials. [3 marks]

QUESTION TWO (20 MARKS)

(a) Discuss three purpose of cost accounting. [6 marks]

(b) Briefly discuss the following terms. [6 marks]

(i) Material costs

(ii) Labour costs

(iii) Overhead costs

(c) Give two ways to reduce fixed cost for a business. [2 marks]

(d) (i) Using an equation define the compound interest. [2 marks]

(ii) If ksh 2500 was invested for 5 years at 10% annual interest compounded quarterly, what would be the future amount. [4 marks]

QUESTION THREE (20 MARKS)

(a) (i) State or write the equation for the single payment compound amount factor. [2 marks]

(ii) Find the future sum of money if ksh 1000 is borrowed at 10% interest compounded annually for 5 years. [3 marks]

(b) Explain the term ;

(i) Financial report [2 marks]

(ii) Balance sheet [2 marks]

(c) Differentiate between the following;

(i) Current assets and fixed assets [2 marks]

(ii) Current liabilities and long term liabilities. [2 marks]

(iii) Capital stock and capital surplus. [2 marks]

(d) Briefly explain the following terms;

- (i) Accumulated retained earnings [2 marks]
- (ii) Depreciation, Amortization and depletion [3 marks]

QUESTION 4 (20 MARKS)

(a) Give the equation for single payment present worth factor. [2 marks]

(b) If ksh 5000 were needed 5 years from now to meet a certain obligation, how much would have to be deposited at 4% interest compounded annually to have ksh 5000 in 5 years. [4 marks]

(c) Define the following financial ratios. [6 marks]

- (i) Liquidity ratios
- (ii) Leverage ratios
- (iii) Profitability ratios
- (iv) Profit margin
- (v) Operating margin

(d) Give the equation of uniform series compound amount factor. [2 marks]

(e) If ksh 100 were deposited at the end of every year for 5 years in an account earnings 6% interest compounded annually. How much will be in the account at the end of 5 years. [4 marks]

(f) Differentiate between grass roots and battery -limit estimates. [2 marks]
