

SOUTHWESTERN UNIVERSITY NIGERIA

KM 20, SAGAMU-BENIN EXPRESSWAY, OKUN OWA, IJEBU-ODE, OGUN STATE.

FACULTY OF SOCIAL & MANAGEMENT SCIENCES

DEPARTMENT OF ACCOUNTANCY AND BUSINESS ADMINISTRATION

HND TO BSC CONVERSION PROGRAMME

2018/2019 FOURTH SEMESTER EXAMINATION

COURSE CODE: ACC/BUS 412 COURSE TITLE: Analysis for Business Decision II

INSTRUCTION: Answer question 1, and any other 3 questions. **TIME:** 2hrs

1. M & U international produces two products - sausage roll and doughnut - for sale, from three main ingredients - flour, baking powder and margarine which are in short supply.

The usage of these ingredients per grain per product is as follows:

Ingredient/Unit	Sausage	Roll	Doughnut
Flour	6	2	
Baking Powder	2		2
Margarine	2	4	

The supply of each ingredient is limited to:
 Flour = 240g
 Baking powder = 120g
 Margarine = 200g

The contribution per product is N100 per sausage-roll and N160 per doughnut. You are required to:

- (a) Formulate the problem as a linear programming problem
- (b) Determine graphically the optimal solution
- (c) Indicate the binding constraint, if any
- (d) At the optimal solution, determine the shadow price of the ingredient Baking powder
- (e) Assuming it is possible to increase the supply of baking powder at the extra rate of N12 per unit, determine if the company should increase the supply.

2. XYZ Logistics Ltd has been contracted by ABC Manufacturing Company that specialises in the production of biscuits, as her official transporter.

ABC Manufacturing Company has stores in Lagos Ibadan, Ijebu and Oshogbo and supplies Aba, Awka, Abakahki and Enugu. The cartons of biscuit supply and demanded are as shown in the table below, while the figures in the boxes are the unit costs of moving an item from an origin to a destination

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	Aba	Awka	Abakaliki	Enugu	Supply
Lagos	29	41	25	46	1250
Ibadan	50	27	45	33	2000
Ijebu	43	54	49	40	500
Oshogbo	60	38	48	31	2750
Demand	3250	250	1750	1250	

As the logistics manager of XYZ Logistics Limited use the Vogel Approximation Method

to allocate the cartons of biscuit in order to minimize the cost of transportation.

3. Eko City University has four(4) campuses, and the project coordinator of the University is trying

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