



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY, JABI – ABUJA
FACULTY OF MANAGEMENT SCIENCES
DEPARTMENT OF PUBLIC ADMINISTRATION
2019_1 EXAMINATION

COURSE CODE: PAD813

CREDIT UNITS: 3

COURSE TITLE: QUANTITATIVE METHODS FOR PUBLIC ADMINISTRATION

TIME ALLOWED: 2^{1/2} HOURS

INSTRUCTIONS:

- 1. Indicate your Matriculation Number clearly**
- 2. Attempt Question one (1) and answer any other three (3) question – four (4)**
- 3. Question number 1 is compulsory and carries 25 marks, while the other question carry 15 marks each**
- 4. Present all your points coherent and orderly manner**

1a. Discuss briefly general approach to the development of mathematical models of economic decision **10 marks**

1b. XYZ company produces product A for which cost (Including labour and material) is ₦6/unit. Fixed cost is ₦80,000. Each unit is sold for ₦10. Determine the number of units which must be sold for the company to earn a profit of ₦60,000 . **15 marks**

2. Suppose a factory manager is setting up a production schedule for two models. A and B of a new product. Model A requires 4 units of labour input and 9 units of capital input. Model B requires 5 units of labour input and 14 units of capital input. The total available labour input for the production of the product is 335 man-hours per day, and that of capital is 850 units per day.

How many of each model should the manager plan to make each day so that all the available labour hours and capital inputs are used? **15 marks**

3. A publishing company finds that the cost of publishing each copy of a magazine is ₦0.38. The revenue from dealers of the magazine is ₦0.35 per copy. The advertising revenue is 10% of the revenue received from the dealers for all copies sold beyond 10,000 units.

What is the least number of copies which must be sold so as to have a positive profit? **15 marks**

4. The current ratio of any organization is the ratio of its current assets to its current liabilities. The Managing Director of ACE Equipment Co. has to obtain a short-term loan to build up inventory. The company has current assets of ₦350,000 and current liabilities of ₦80,000.

How much can the Managing Director borrow if the company's current ratio must not be less than 2.5?

Note that funds received are considered current assets and loans are considered current liability. **15 marks**

5 (a) Discuss the important elements in decision analysis

8 marks

(b) Explain briefly the important terminologies in the inventory control theories **7 marks**

6. Compare laspeyres with pausche price index

15 marks