NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY, JABI–ABUJA
FACULTY OF MANAGEMENT SCIENCES
DEPARTMENT OF ADMINISTRATION
2022_2 EXAMINATION

COURSE CODE: PAD813   **CREDIT UNITS: 3**
COURSE TITLE: Quantitative Method for Public Admin
INSTRUCTION: 1. Indicate your Matriculation Number clearly
2. Attempt question one (1) and any other three (3) questions – Four questions in all
3. Question one (1) is compulsory and carries 25 marks, while the other questions carry 15 marks each.
4. Present all your points in coherent and orderly Manner
TIME ALLOWED: $2^{1/2}$ Hrs

Q1a Defined Quantitative Techniques?

Q1b. Outline the general approach to the development of mathematical models of economic decisions.

1c. Use the below table to calculated the Arithmetic means and the weighted means of the given data in

X	F	Weight	Score
1	15	5	48
2	24	4	72
3	32	3	85
4	45	2	53
5	54	1	67

Q2. The ABC LMITED is in the business of manufacturing and distributing food items: Rice, Semolina, Sugar and Weat. The company decides to make a new two brand for the customer. The question is what should be the price of the new product? Through market research and comparison with other products, management agrees that the product could be priced between N60 and N100 and still competes effectively in the market place. Market research predicts that the quantities sold at the prices of N60, N70, N85, and N100 would be 2600, 2200, 1600, and 1000 units respectively. Let assume that the Total cost of the quantity is given as 141,000; 127,000; 106,000 and 85,000 each. Calculate the alternative price for each product to be sold?

Q3a. What is Forecasting? Outline the four Steps in forecasting

3b. Use the table below to forecast the following sales values from month of January to April?

Units	Jan	Feb	Mar	Apr	May	Jun
Sales (s)	50	55	70	50	45	90

Q4 the following set of data was given:

Year	X	Y
2010	1	50
2011	2	80
2012	3	90
2013	4	49
2014	5	75
2015	6	58
2016	7	82
2017	8	73
2018	9	95

a. Compute the regression table
b. Calculate Slope a.
c. Calculate Intercept b.
d. Assemble the equation of a line
e. Use $\hat{Y} = \hat{a} + bx$ to forecast the value of output, Y, for year 2022 [5 marks]. Total 15 Marks

Q5a what is Index numbers
Q5b. Calculate the Relative Price Index Time Series for Monthly Salaries of workers as given below:

Years	Average monthly salaries(N)
1985	1,200
1990	2,000
1995	1,800
2000	3,600
2005	5000
2010	6500

[10 Marks]

Q6a. Explain the concept of trend lines in forecasting?

Q6b. draw a straight line reasonably approximates a set of data for 1995 – 2000