NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi - Abuja
FACULTY OF MANAGEMENT SCIENCES
2021_2 EXAMINATION 45678

COURSE CODE: BUS 800
COURSE TITLE: QUANTITATIVE ANALYSIS
CREDIT UNIT: 2
INSTRUCTION: 1. Indicate your Matriculation Number clearly
2. Attempt question one (1) and any other TWO (2) questions; THREE questions in all
3. Question one (1) is compulsory and carries 30 marks, while the other questions carry 20 marks each.
4. Present all your points in a coherent and orderly Manner
TIME ALLOWED: 2½ Hours

QUESTION ONE
(a) A fundamental concept in all a branch of mathematics is that of set, which is defined as "any well-defined list, collection or class of objects" In elementary mathematics, what kind of set is denoted by capital letter R ? **8 marks**
(b) What are integers? **7 marks**
(c) One important property of integers is that they are normally closed. Under what condition is an integer not closed? **8 marks**
(d) What type of integers are the natural numbers , denoted by the capital letter N ? **7 marks**

QUESTION TWO
(a) Explain the Bayes Theorem. **5 marks**
(b) Explain the term, joint Probability Table. **5 marks**
(c) Consider a research activity with the following observations on the number of customers that visit XYZ supermarket per day. The observations (or events) are recorded in a joint probability table as follows:

Age (Years)	Female	Male	Total
Below 30	60	70	130
30 & above	60	20	80
Total	120	90	210

From the table above, write out the various joint events you can discern from it. **10 marks**

QUESTION THREE
(a) In the study of probability, what is an event? **7 marks**
(b) Define compound event. **7 marks**
(c) What is a rational number? **6 marks**

QUESTION FOUR

A businessman has constructed the payoff matrix below. Using the EMV criterion, analyse the situation and advise the businessman on the kind of property to invest on. **20 marks**

Decision to Invest	State of Nature		
	Good economic condition ₦	Poor economic condition ₦	Turbulent economic condition ₦
Apartment Building (d1)	50,000	30,000	15,000
Office Building (d2)	100,000	40,000	10,000
Warehouse (d3)	30,000	10,000	-20,000
Probabilities	0.5	0.3	0.2