Course Code: CSC 328

Course Title: Discrete Maths, Network and Graph Theory

Lecturer: Dr Kalesanwo O.

Lecture Days: Mondays

Lecture Time: 15:00 – 17:00

Task: Assignment

Instruction: Write the solutions in your class notes.

Question 1: In a college, 200 students are randomly selected. 140 like tea, 120 like coffee and 80 like both tea and coffee.

a. How many students like only tea?
b. How many students like only coffee?
c. How many students like neither tea nor coffee?
d. How many students like only one of tea or coffee?
e. How many students like at least one of the beverages?

Question 2: As discussed in the last class, prove De Morgan's Laws

Question 3: Let U = {1, 2, 3, 4, 5, 6, 7, 8}, P = {4, 5, 6} and Q = {5, 6, 8}. Show that $(P \cup Q)' = P' \cap Q'$.

Question 4: If A= {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}, what is the cardinality of the power set of A?

Question 5: Prove AU(B n C) =(AUB) n (A u C)

Question 6: Let x be a finite set of Natural numbers i.e. S= N. There are 80 numbers in x that are multiples of 2, 95 numbers are multiples of 3, 70 numbers are multiples of 5, 30 numbers are multiples of 6, 25 numbers are multiples of 15 and 13 numbers are multiples of 30. What is the cardinality of the set S?

Question 7: In a high school containing 100 students; 45 students takes Spanish, 28 takes French, 22 takes Chinese, 12 students takes Spanish& French, 8 students takes Spanish& Chinese, 10 students French& Chinese, 30 students takes no language at all. How many students takes the three languages.