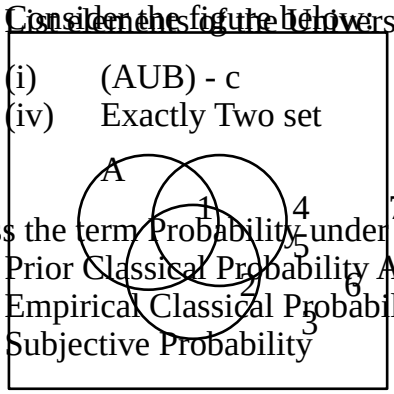
LAGOS CITY POLYTECHNIC, IKEJA
SCHOOL OF ENGINEERING AND APPLIED SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
2015/2016 SEMESTER EXAMINATION

COURSE TITLE: ELEMENTS OF PROBABILITY **NO OF QUESTIONS: 6**
COURSE CODE: STA 112 **TIME ALLOWED: 2 HRS**
FOR WHOM: ND YR I CS PT **INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS**

1. (a) Define and illustrate the following using Vennu Diagrams
   (i) Universal set (ii) Complement of a set (iii) Subset
   (iv) Union of sets (v) Intersection of sets (vi) Disjoint sets

   (b) Consider the figure below:



   List elements of the Universal set corresponding to
   (i) (AUB) - c (ii) (AnB) (iii) An(BUC)
   (iv) Exactly Two set (v) At least two sets (vi) Exactly three sets

2. Discuss the term Probability under the following approaches:
   (a) Prior Classical Probability Aproach
   (b) Empirical Classical Probability
   (c) Subjective Probability

3. (a) Define thefollowing probability terms:
   (i) Sample Space (ii) Equally-likely Events
   (iii) Mutually Exclusive Events (iv) Exhaustive Events
   (v) Independent Events.

   (b) Of the 125 person applying for a certain job at a data processing centre 79 had previous work expeyience and 62 had college degrees, while 38 had both work experience and college degrees.
   (i) How many applicants did not have work experience?
   (ii) How many applicants did not have college degrees?
   (iii) How many applicants had work experience but not college degrees?
   (iv) How many applicants had college degrees but not work expereince?
   (v) How many applicants had either work experience or college degrees but not both?

4. (a) Given Event A and B in the Sample space S, what do you understand by the term Conditional Probability of Event A given B (i) When A and B are independent. (ii) When A and B are dependent

   (b) In a large group of people, it is known that 10% have a hot breakfast, 20% have a hot lunch and 25% have a hot breakfast or hot lunch. Find the probability that a person chosen at random from this group:
   (i) Have a hot breakfast and a hot lunch?
   (ii) Given that the person chosen has a hot breakfast, what is the probability that he will also have a hot lunch?