BOWEN UNIVERSITY, IWO
FACULTY OF SOCIAL AND MANAGEMENT SCIENCES
DEPARTMENT OF ECONOMICS
BSc. DEGREE EXAMINATION

SESSION: 2018/2019. **Semester:** Second

Course Code: ECN 106 (2) **Course Title:** Introduction to Statistical Methods in Economics II.

Time Allowed: 2 hours

INSTRUCTION: Answer questions **two** and any other two.

SECTION A

1. A jar contains seven red discs and four white discs. Two discs are selected without replacement.

   (a) What is the probability that both discs selected are red?

   (b) What is the probability that both discs are white?

   (c) What is the probability that both discs selected are of the same colour?

   20 Marks

2. In a fair competition, a fair dice is thrown twice. If the second score is not the same as the first, the second does not count, and the dice is thrown again until same is obtained. The two scores are added to give a total.

   (a) List the possible outcomes.

   (b) Find the probability that

       (i)   The total is X such that $X \leq 8$

       (ii)   The first score is higher than the second score

       (iii)   At least one of the score is a 6.

       (iv)   Neither of the score is a 5.

       (v)   The total is X such that $X \geq 8$

3. In a keenly contested scholarship competition for the 100 level Economics students of Bowen University, Iwo, Nigeria; two students were chosen at random out of eighteen boys and twelve girls. What is the probability that two students selected are

   (a) Both boys

   (b) Both girls

   (c) A boy and a girl.

   Note: You are advised to solve with the aid of a tree diagram.

   20 Marks

4. (a) Who is Siméon-Dennis Poisson?

   (c) Suppose X is distributed in Poisson form, with mean being equal to 2.

   Find

   (i)   P(X) when X = 0, 1, 2, 3 and 4 ... and more

   (ii)   P(X ≥ 4)

   (iii) P(0 < X < 4)

   20 Marks

5. In a recent interview conducted by Bowen University for admitting new students, it was shown that candidates arrive at the hall at an average rate of 8 candidates per hour. Given that the candidates arrive randomly. Calculate the probability that

   (a) Exactly eight candidates will arrive in one hour

   (b) More than six candidates will arrive in one hour

   (c) Exactly eight candidates will arrive in 15 minutes

   (d) Exactly eight candidates will arrive in ten minutes.

   20 Marks