

Dr. Shaimaa Helal

المجموعة:

القسم:

الاسم:

1- [5 Marks] A class consisting of 4 girls and 12 boys student are randomly divided into four groups of 4. What is the probability that each group includes a girl student.

2-[5 Marks] The phone lines to an airline reservation system are occupied 40% of the time. Assume that the events that the lines are occupied on successive calls are independent. Assume that 10 calls are placed to an airline

- i) What is the probability that for exactly three calls the lines are occupied?
- ii) What is the probability that for at least two calls the lines are not occupied?
- iii) What is the expected number of calls in which the lines are all occupied?

3- [5 Marks] A factory production line is manufacturing using three machines, A, B, and C. Of the total output, machine A is responsible for 25%, machine B for 35% and machine C for the rest. It is known from previous experience with the machines that 5 % of the output from machine A is defective, 4% from machine B and 2% from machine C. A bolt is chosen at random the production line and found to be defective. What is the probability that it came from machine C?

4- [5 Marks] A pair of fair dice is thrown. Let X be the random variable denotes maximum of two numbers Find

- (a) Find the probability function of X and graph it.
- (b) Find the distribution (cumulative)function of X and graph it.
- (c) Find mean , variance and standard deviation.