

**KV INSTITUTE OF MANAGEMENT AND INFORMATION STUDIES  
COIMBATORE**

**STATISTICS FOR MANAGEMENT- ASSIGNMENT**

1. A blade manufacturer manufactures and supplies blades in packets of 10. There is a 0.2% probability for any blade to be defective. Find approximately the number of packets containing two defective blades in a consignment of 20,000 packets.
2. Forty percent of business travelers carry a laptop. In a sample of 15 business travelers
  - (i) What is the probability that three will have a laptop?
  - (ii) What is the probability that 12 of the travelers will not have a laptop?
  - (iii) What is the probability that atleast three of the travelers have a laptop?
3. The weights of the contents of cans of tomato sauce produced by a company are normally distributed with a mean of 8 ounces and a S.D of 0.2 ounces.
  - (i) What percentage of all cans produced contain more than 8.4 ounces of tomato paste?
  - (ii) What percentage of all cans produced contain less than 7.8 ounces?
  - (iii) What percentage of cans contains between 7.4 and 8.2 ounces?
  - (iv) Ninety-five percent of cans will contain atleast how many ounces?
  - (v) What percentage of cans contains between 8.2 and 8.4 ounces?
4. A researcher for a Coffee Corporation, is interested in determining the rate of coffee usage per household in the United States. She believes that yearly consumption per household is normally distributed with an unknown mean  $\mu$  and a S.D of about 1.25 pounds.
  - (i) If she takes a sample of 36 households and records their consumption, of coffee for one year, what is the probability that the sample mean is within one-half pound of the population mean?
  - (ii) How large a sample must she take in order to be 98% certain that the sample mean is within one-half pound of the population mean?
5. The manager of a shop selling beverages wants to estimate the actual amount of beverage in one litre bottles from a nationally known manufacturer. As per manufacturer's specifications the S.D of the volume of the beverage is 0.02 litre. The average amount of beverage per 1 litre bottle is found to be 0.995 litre on checking 50 bottles. Set up 99% confidence interval estimate of the true population average amount of beverage in a 1 litre bottle. Check whether the manufacturer is genuine in filling the beverage.
6. A movie maker sampled 55 fans who viewed his master piece movie and asked them whether they had planned to see it again. Only 10 of them believed that the movie was worthy of a second look. Find the standard error of the population of fans who will view the film a second time. Construct a 90% confidence interval for this population.