Unit-4 Question Bank, Applied Statistics

A stenographer claims that she can take decision at the rate of 120 wpm. Can we reject her claim on the basis of 100 trails in which she demonstrate a mean of words with standard deviation of α=5%?
It is claimed that a random sample of 100 tyres with with the mean life 15269kms is drawn from a population of tyres which has a mean life of 15200kms and standard deviation of 1248kms. Test the validity of the claim at 1% level of significance.
A weighing machine without any display was used by an average of 320 persons a day with a standard deviation of 50 persons. When an attractive display was used on the machine, the average for 100days increased by 15 persons. Can we say that the display did not help much? Use a level of significance of 0.05.
A coin is tossed 900 times and had appeared 490 times. Does this result support the hypothesis that a coin is unbiased? Use 5% level of significance.
A sample of 400 parts manufactured by a factory, the number of defective parts was found to be 30. The company, however, claimed that at most 5% of their product is defective. Is the claim tenable?
In a random sample of 400 persons from a large population, 120 are females. Can it be said that males and females are in ratio 5:3 in the population? Use 1 % level of significance.
In big city 325 men out of 600 men were found to be smokers. Does this information support the conclusion that the majority of men in this city are smokers?
In order to make a survey of the buying habits, 2 makers A & B are chosen at 2 different part of city. 400 women shoppers are chosen are random in market A. Their average daily expenditure on food is found to be Rs.250 with standard deviation Rs.40. The figure are Rs.220 and Rs.55 in the market B, where also 400 female shoppers are chosen at random. Test at 1% liberal of significance weather the daily food expenditure of the two population of shoppers are equal.
Before an increase in excise duty on tea, 400 people out of sample of 500 persons were found to be tea drinkers. After an increase in duty, 400 people were tea drinkers in a sample of 600 people. Using standard error of proportion, state weather is a significant decrease in the consumption of tea. Take α=0.05
In two large populations there are 30% and 25% respectively of fair haired people. Is this difference likely to be hidden in samples of 1200 and 900 respectively from the two populations? Use 5% level of significance.
A radio shop sells, on an average 200 radios per day with standard deviation 50 radios. After an extensive advertising campaign, the management will compute the average sales for the next 25 days to see whether an improvement has occurred. Assume that the daily

sales of radio is normally distributed. Test the hypothesis at 5 % level of significance if the sample average is 216.

A manufacturer claimed that at least 95% of the equipment which he supplied to a factory conformed to specification. An examination of a sample of 200 pieces of equipment revealed that 18 were faulty. Test this claim at a significance level of 0.05.

Following information is related to 2 places A and B test. Whether there is any significance between their mean wages. Use α=5%.

	A	B
Mean Wages	47	49
Standard Deviation	28	40
No. of Workers	1000	1500

The mean yield of 2 sets of plots and their variability are as given below. Examine whether the difference in the variability in the yields in significance at 5% level of significance.

	Set of 40 plots	Set of 60 plots
Mean Yield per plot	1258 lb	1243 lb
S.D per plot	34	28

A company has head office at Kolkata and a branch at Mumbai. The personal director want to know if the workers at the two places would like the introduction of a new plan work and a survey has conducted for this purpose. Out of sample of 500 workers at Kolkata 62% favor the new plan. At Mumbai out of 400 workers 41% were against the new plan. Is there any significance difference b/w the two groups in their attitude towards the new plan at 5% level?

A machine puts out 16 imperfect articles in the sample of 500, after the machine is overhauled it puts out 3 imperfect articles in the batch of 100. Has the machine improved? Use a 5% level of significance.

A manufacturer claimed that at least 98% of the equipment which he supplied to a factory conformed to specification. An examination of a sample of 100 pieces of equipment revealed that 18 were faulty. Test this claim at a significance level of 0.01.

Before an increase in excise duty on tea, 300 people out of sample of 500 persons were found to be tea drinkers. After an increase in duty, 500 people were tea drinkers in a sample of 600 people. Using standard error of proportion, state weather is a significant decrease in the consumption of tea. Take α=0.01

A coin is tossed at random 400 times and turns up 240 times. Can the coin be regarded unbiased? Use 5% level of significance.

A coin is tossed at random 900 times and head appear 490 times. Does this result support the hypothesis that the coin is unbiased? Use 5% level of significance.