**Que 1) Plot a histogram,**

**10, 13, 18, 22, 27, 32, 38, 40, 45, 51, 56, 57, 88, 90, 92, 94, 99**

**Solution:-**

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| 5 |  |  |  |  |  |  |  |  |  |  |  |
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| 4 |  |  |  |  |  |  |  |  |  |  |  |
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| 3 |  |  |  |  |  |  |  |  |  |  |  |
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| 2 |  |  |  |  |  |  |  |  |  |  |  |
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| 1 |  |  |  |  |  |  |  |  |  |  |  |
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| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |  |

**Que 2) In a quant test of the CAT Exam, the population standard deviation is known to be 100. A sample of 25 tests taken has a mean of 520. Construct an 80% CI about the mean.**

**Solution:-**

Population sd = 100

Sample sd s = 520

α= 0.2

zα/2 = 0.1

z0.1 = 1-0.1 = .9 ~ 1.29

Z-score is 1.29 {From table table}

CI = point estimate +/- margin of error

Higher limit = 520+1.29\*(100/(25)^(1/2)) = **545.8**

Lower limit = 500-1.29\*(100/(25)^(1/2)) = **494.2**

**Que 3) A car believes that the percentage of citizens in city ABC that owns a vehicle is 60% or less. A sales manager disagrees with this. He conducted a hypothesis testing surveying 250 residents & found that 170 residents responded yes to owning a vehicle.**

1. **State the null & alternate hypothesis.**
2. **At a 10% significance level, is there enough evidence to support the idea that vehicle owner in ABC city is 60% or less.**

**Solution:**

Null hyphothesis:- Vehicle owned by people in city ABC is 60% or less

Alternate hypothesis :- Vehicle owned by people in city ABC is not 60% or less.

Pˆ = 170/250 =.68

P0 = 60%~0.6

Z = 0.68-.6/((.6-(1-.06)/25)^(1/2) = 2.5

When α= 0.9 z=1-.9/2 = .55; Z score is found to be 0.13

2.5 >0.13

**Hence, hypothesis is rejected and alternate hypothesis is accepted.**

Que 4) What is the value of the 99 percentile?

2,2,3,4,5,5,5,6,7,8,8,8,8,8,9,9,10,11,11,12

**Solution :-** 12

Que 5) In left & right-skewed data, what is the relationship between mean, median & mode?

Draw the graph to represent the same.

**Solution :-**

Mode

Median

Median

Mean

Mean

Mode