CLASS TEST/MID TERM SCRIPT

Roll No | 2 | 0 | 2 | 2 | 1 | 4 | 0 | 4 | 9 |

Course Code: MATH-207

Course Title: _____

Student Cr Hr Group: _____

Term/Semester: _____

Date: _____

Signature of Invigilator

17

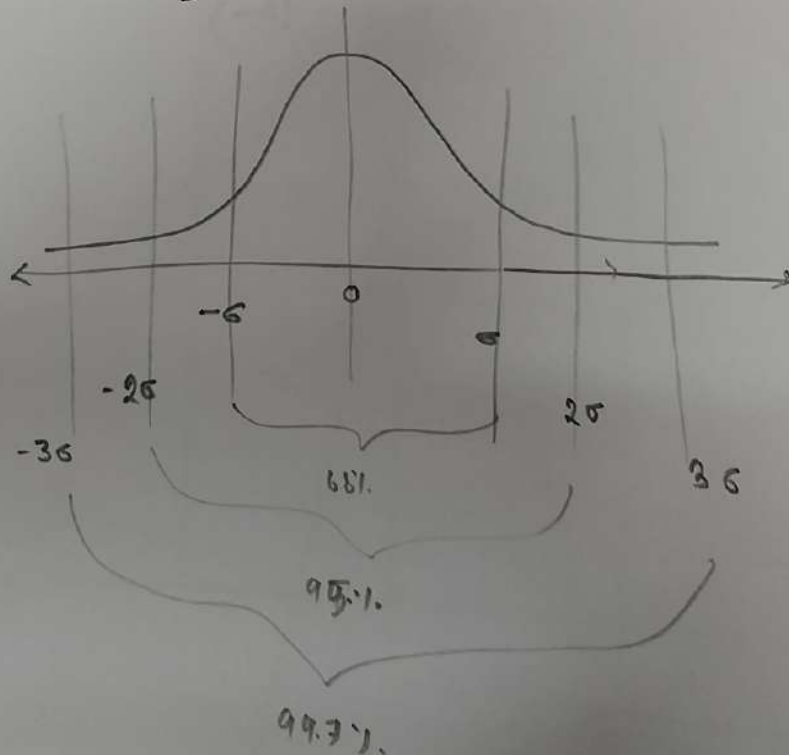Answer to the Question no (1)

According to chebysef's law,

if $k \geq 1$, $100\left(1 - \frac{1}{k^2}\right)$ % percentage of data resides within the specific area where $\bar{x} \pm ks$ in the specific bound where $\bar{x}$ = mean, s = standard deviation, k = specific result.

$\bar{x} \pm ks \Rightarrow 28 \pm 3k = (22, 34)$

$\bar{x} + 2(3)$

$k = 2$

from the bell curve,

2.5

between the interval $-3\sigma, 3\sigma$ we see 99.7% of the data resides between.

∴

from z score,

for 22 ⇒ $\dfrac{22-28}{3} = -2$

for 34 ⇒ $\dfrac{34-38}{3} = 2$

the data thus lies between -2σ, 2σ region that covers 95% of the data, so $\left(1 - \dfrac{1}{2^2}\right) \times 100 = $

(Ans)

Answer to the Question no (2)
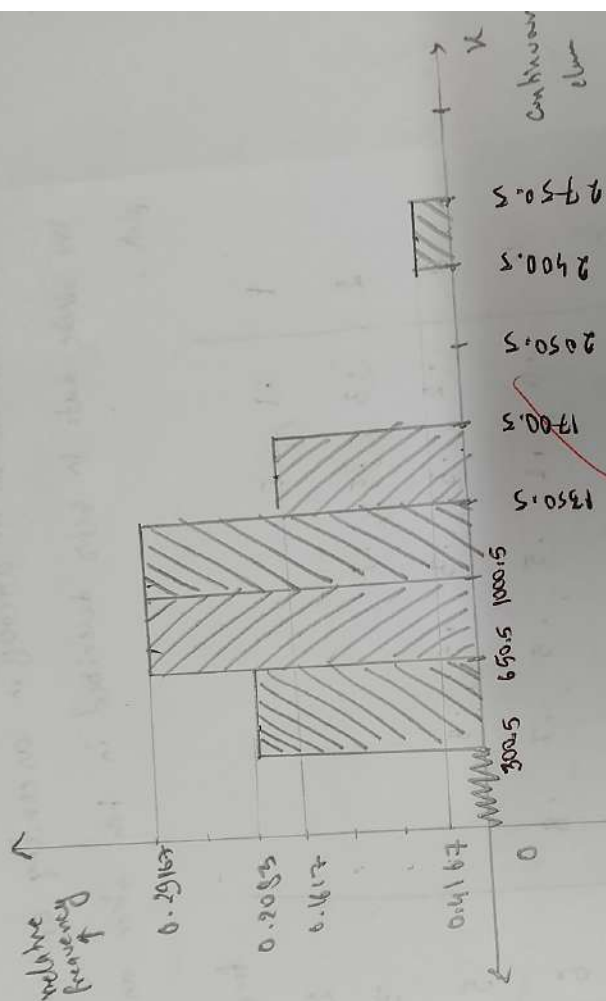
lowest value = 350

highest value = 2250 2550

∴ difference = (2550−350) → = 2200

∴ with 350 difference, no of classes = $\frac{2200}{350}$ = 6.28

≈ 7.

$\frac{2200}{7}$ ≈

Class	Continuous class	midpoint	Tali	frequency	R.F
301−650	300.5−650.5	475.5	〥ℕ	5	0.2083
651− 1000	650.5 −1000.5	825.5	ℕℕ 11	7	0.29167
1001− 1350	1000.5 −1350.5	1175.5	ℕℕ 11	7	0.29167
1351− 1700	1350.5−1700.5	1525.5	1111	4	0.16667
1701− 2050	1700.5−2050.5	1875.5		0	0
2051− 2400	2050.5−2400.5	2225.5		0	0
2401−2750	2400.5−2750.5	2575.5	1	1	0.04167
			Total	24	1

The relative frequency histogram is drawn below.

In x axis continuous class and in y axis relative frequency the graph is plotted.

relative frequency ↑

0.29167
0.2083
0.1617
0.04167
0

300.5 650.5 1000.5 1350.5 1700.5 2050.5 2400.5 2750.5

continuous class →

Answer to the Question no (3)

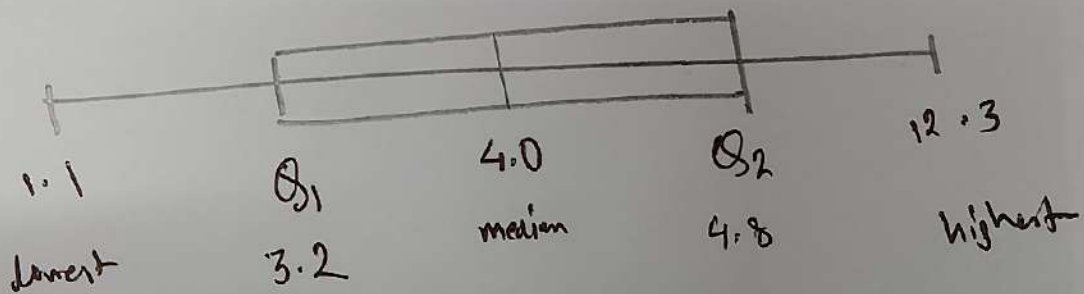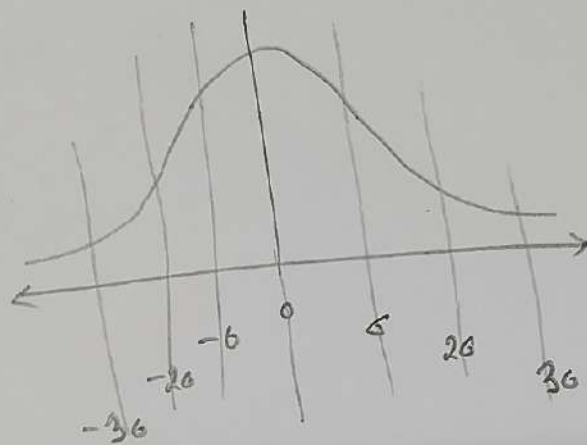The whole dataset in already in ascending order. Then the whole data in being described in tea. stem and leaf plot.

		frequency
1	·1 , ·5	2
2	·3 , ·5 , ·7	3
3	·2 , ·3 , ·3 , ·5 , ·8	5
4	·0 , ·2 , ·5 , ·5 , ·7 , ·8	6
5	·5 , ·6	2
6	·5 , ·7	2
12	·3	1

Total = 21

4.5

from the dataset we can se,

in 4, totem, the leaves are the highest that are 6 in total.

The dataset can be said approximate.

as for,

1·1	Q_1	4.0	Q_2	12·3
lowest	3.2	median	4.8	highest

above in calculated the box plot,

as for median $n = 21$, $\therefore$ $\dfrac{\frac{21}{2}th + (\frac{21}{2}+1)th}{2}$ $(\frac{21+1}{2})nth$

$$= 4.0$$