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Q no 4)

part a) Differentiate with example.

Descriptive

- use data to provide description of population.
- collection of data.
- presentation of data.
- explanation of facts.
- it summarize the characteristic of data.
- to describe basic feature of the data.

Example

- chart
- graph
- tables

Inferential

- Make interference and predictions about a population based on a sample of data taken from the population.
- it allows you for the decision making.
- they determine probability of characteristic of population based on sample.

Example

Applying Z-test, T-test to find accurate information.

Statistic

- A descriptive measure (numerical value) that is computed from a sample data.
- characteristic of sample.

eg. (you ~~want~~ draw a random sample of 10 teachers & determine their mean income is 50,000)

Parameter

- A descriptive measure that is computed from an entire/whole population data.
- characteristic of population.

eg. (you want to know the mean income of teachers in INU)

Discrete

- A variable that can not be expressed in fraction or decimal

Example

• number of children per family.

Continuous

- A variable that assume all the possible values in a continuum.
- it can take any value within the given range.
- It can take form of fraction or decimal.

Example :- Height, weight.

Q no 4)
part B)

use of Arithmetic mean

- used when nature of the data is same.
- the arithmetic mean is appropriate if the value have the same unit.
- Arithmetic mean is usually use for simple average of the data.

(3)

use of Geometric mean.

- used for comparing data with very different properties or when data is in % form.
- geometric mean is appropriate, if the values have different units.
- use in case of compounding that occurs from period to period.

a no 1) part a)

Classes	Class boundaries	Class mark	frequency	Relative frequency	Cumulative frequency
21-30	20.5 - 30.5	$\frac{21+30}{2} = 25.5$	3	$\frac{3}{23} = 0.13$ $0.13 \times 100 = 13\%$	3
21-30	20.5 - 30.5	$\frac{21+30}{2} = 25.5$	4	$\frac{4}{23} = 0.17$ $0.17 \times 100 = 17\%$	3+4=7
31-40	30.5 - 40.5	$\frac{31+40}{2} = 35.5$	4	$\frac{4}{23} = 0.17$ $0.17 \times 100 = 17\%$	7+4=11
41-50	40.5 - 50.5	$\frac{41+50}{2} = 45.5$	2	$\frac{2}{23} = 0.08$ $0.08 \times 100 = 8\%$	11+2=13
51-60	50.5 - 60.5	$\frac{51+60}{2} = 55.5$	4	$\frac{4}{23} = 0.17$ $0.17 \times 100 = 17\%$	13+4=17
61-70	60.5 - 70.5	$\frac{61+70}{2} = 65.5$	2	$\frac{2}{23} = 0.08$ $0.08 \times 100 = 8\%$	17+2=19
71-80	70.5 - 80.5	$\frac{71+80}{2} = 75.5$	4	$\frac{4}{23} = 0.17$ $0.17 \times 100 = 17\%$	19+4=23
81-90	80.5 - 90.5	$\frac{81+90}{2} = 85.5$	4	$\frac{4}{23} = 0.17$ $0.17 \times 100 = 17\%$	
			$\Sigma f = 23$		

(4)

Q no 1)

part B).

Stem & Leaf Display.

Stem	Leaf.
2	3, 5, 9
3	1, 3, 5, 7
4	1, 2, 7, 9
5	3, 6
6	4, 8, 9
7	1, 2, 2, 5
8	

Q no 3)

Ans

Median.

Class boundaries	frequency.	Mid point	C.F.
0 - 5	34	2.5	34
5 - 10	39	7.5	73
10 - 15	28	12.5	101
15 - 20	14	17.5	115
	<u>115</u>		

$$\text{Mid point} = \frac{\text{Lower boundary} + \text{upper}}{2}$$

$$n = 115 \quad \frac{n}{2} = \frac{115}{2} = 57.5$$

$$\text{Median} = l + \left(\frac{\frac{n}{2} - cf}{f} \right) \times h$$

- putting value.

$$m = 5 + \left(\frac{57.5 - 34}{39} \right) \times 5$$

5

$$m = 5 + \left(\frac{23.5}{39} \right) \times 5$$
$$= 5 + (0.60) \times 5$$
$$= 5 + 3 = 8$$

Median = 8.

Q no 3)

Ans

Geometric mean

class interval	f	Mid point	log x	f log x
0-5	34	2.5	0.3979	13.5286
5-10	39	7.5	0.8750	34.125
10-15	28	12.5	1.0969	30.7132
15-20	14	17.5	1.2430	17.402
	$\Sigma = 115$			$\Sigma = 95.7688$

$$G.M = \text{Antilog} \left[\frac{\Sigma f \log x}{N} \right]$$

$$G.M = \text{Antilog} \left[\frac{95.7688}{115} \right]$$

$$G.M = \text{Antilog} [0.8327]$$

$$G.M = 6.8029$$