East West University

Assignment 2

Submitted To:

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Ans to the Q: NO: 1

The table shows the number of hours slept in a study on 45 individuals

Class Interval	frequency	Relative frequency	cumulative frequency (less than type)	cumulative relative frequency (less than type)
3-5	12	26.67	12	26.67
5-7	18	40.00	30	66.67
7-9	9	20.00	39	86.67
9-11	6	13.33	45	100
	45			

comment: The class between 5 to 7 has the maximum relative frequency which is 40%.

Ans to the Q: NO: 2

a] Number of welders get hourly wage at 6 to 10 is, = 13+8 = 21

b] Number of welders get hourly wage of less than $6 = 15+27+20 = 62.

c] Number of welders get hourly wage of more than $8 = 8+5+2 = 15.

d] Number of welders are studied in this survey is, = 15+27+20+13+8+5+2
= 90.

e] Percentage of welders get hourly wage of $4 to $8 = $\frac{20+13}{90} \times 100$
= 36.67%.

Ans to the Q:No 3

a] The mean hotel room rate, $\bar{x} = \frac{\Sigma x}{n}$
$= \frac{3181}{20}$
= 159.05

b] Hotel Rooms Rate in Ascending order:-
120, 123, 125, 126, 134, 139, 144, 145, 146, 160, 162, 163, 167, 167, 173, 177, 192, 207, 245.

Median, $= \left(\frac{20+1}{2}\right)^{th}$ value

$= 10.5^{th}$ value

So, median $= \frac{160+162}{2} = 161.$

∴ The estimated median hotel room rate is 161

c] The most frequent data is 167. So the mode is 167.

d] First Quartile, $Q_1 = \left(\frac{(20+1)\times 25}{100}\right)^{th}$ value

$= 5.25^{th}$ value

$= 5^{th}$ value $+ (0.25) \times (6^{th} - 5^{th})$

$= 134 + (0.25) \times (139 - 134)$

$= 135.25$

∴ 1st One fourth rates are less than 135.25

e] Third Quartile, $Q_3 = \left(\frac{(20+1)\times 75}{100}\right)^{th}$ value

$= 15.75^{th}$ value

$= 15^{th} + (0.25) \times (16^{th} - 15^{th})$

$$= 167 + (0.75) \times (173 - 167)$$

$$= 171.5$$

∴ The rate of 25% hotel room is less than 171.5$

Ans to the Q: NO: 4

50 nurses aides recive = $8 an hour.

50 practical nurces aides recive = $15 an hour.

100 Registered nurces aides recive = $24 an hour.

total nurces = 200

∴ weighted mean hourly wage $= \frac{(50 \times 8) + (50 \times 15) + (100 \times 24)}{200}$

$$= \frac{3550}{200}$$

$$= 17.75$$ an hour

Ans to the Q: NO: 5

Acumuted value:

109.4, 113.8, 111.7, 111.9, 114.7, 112.28

Geometric mean $= (\pi x)^{\frac{1}{N}}$

$= (109.4 \times 113.8 \times 111.7 \times 111.9 \times 114.7)^{\frac{1}{5}}$

$= 12.16$

Geometric mean percent increase in sales over the period is approximately 12.16%.

Ans to the Q: NO: 6

Geometric mean $= \left(\frac{752000000}{720000}\right)^{\frac{1}{15}} - 1$

$= 1.59 - 1$

$= 0.59 \times 100\%$

$= 59\%$

Therefore, the geometric mean annual increase for the period is approximately 59%.

Ans to the Q: NO: 2

The number of days in Ascending order —

6, 8, 10, 11, 13, 15, 15, 16, 17, 19, 22, 49.

a. i) Arithmetic mean $= \frac{\Sigma x}{n}$

$= \frac{201}{12}$

$= 16.75$

ii) Median $= \frac{6^{th} \text{ value} + 7^{th} \text{ value}}{2}$

$= \frac{15+15}{2}$

$= 15$

iii) The most frequent data is 15. So the mode is 15.

b. Among the measure above mode is best. Because here 49 is extreme value and we know arithmetic mean affected by extreme value and we cannot use it in nominal and ordinal. For median we cannot use it in nominal. But mode is used in every scale of measurement so, mode is the best for this data.

Ans to the Q: NO: 8

a] 40 welders were studied.

b] The class interval is 5.

c] 10 welders earn less than $10 per hour.

d] About 75% of the welders make less than ,=5+10+15+20
= $50.

e] 10 of the welders studied made less than $5