CHAROTAR ENGLISH MEDIUM SCHOOL
First internal 2018-19
Sub: Statistics

STD: 11 Com **Time: 2 hours**
Date:22/10/2018 **Marks: 50**

Section – A: Multiple Choice Questions **[4]**

(1) (b) 10
(2) (b) no mode
(3) (b) Income category
(4) (d) Coefficient of Variation

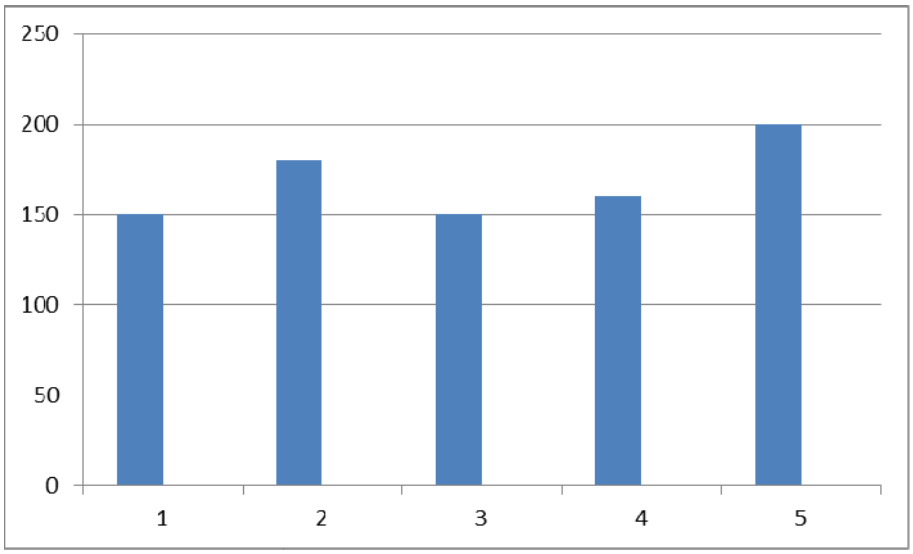
Section – B: Answer in one sentence **[4]**

(5) The number Value of an observation is repeated is called frequency?
(6) A process of arranging raw data into proper form is called classification.
(7) The value which is located exactly in the middle if data after arranging it in ascending order.
(8) If the information is obtain by inspecting each and every unit of population is called population inquiry

Section – C: Answer the following **[12]**

(9) "The method of inquiry in which information is to be obtain with the help of an organization instead of enumerators is called method of indict inquiry.".

(10)



(11) Characteristics of Ideal Measure of central Tendency.
1) It should be well defined and rigid.
2) It should be easy to understand and calculate.
3) It should be based on all the observation of data.
4) It should be suitable for further algebraic operation.
5) It should be stable measure.
6) It should not be unduly affected by unduly large or small observation.

(12) $\bar{x}_c = \frac{n1\bar{x}1+n2\bar{x}2}{n1+n2}$

$68 = \frac{(7)(62)+(3)(\bar{x}2)}{7+3}$

$(680-434)\div 3 = \bar{x}2$

$\bar{x}2 = 82$

(13) The measure of dispersion cannot be measure in terms of unit of measurement is called relative measure of dispersion. Which are Coefficient of range, Coefficient of mean deviation, Coefficient of quartile deviation, Coefficient of standard deviation.

(14) $S^2 = 25$

Section – D: Answer the following **[12]**

(15)

Class	Tallymarks	Frequency
30-40	IIII	4
40-50	IIII I	5
50-60	IIIII III	8
60-70	IIII	4
70-80	III	3
80-90	IIIII I	6
Total	-----	30

(16)

Designation	Gender		Total
	Male	Female	
Security Personnel	28	12	40
Peon	40	20	60
Clerks	30	50	80
Manager	10	6	16
Total	108	88	196

(17)

Class	Fi	xi	di=x-a/c	fidi
10-20	7	15	-7	-49
20-40	24	30	-4	-96
40-60	40	50	0	0
60-70	16	65	3	48
70-80	8	75	5	40
80-100	5	90	8	40
	100		5	-17

$$\bar{x} = A + \frac{\varepsilon fidi}{n} \times c$$

$$\bar{x} = 50 + \frac{-17}{100} \times 5$$
$$\bar{x} = 50 - 0.85$$
$$= 49.15$$

(18)

1. **Collector of data**
   - Before using the secondary data one should verify that **who has collected** the data.
   - The data collected by Government and autonomous organization are considered to be the reliable data compare to the data collected by private organizations.
2. **Purpose of inquiry should be examined**
   - It is better to check the purpose of inquiry before the use of any kind of data.
   - If the **purpose of collecting** the data commensurate the our purpose then data enhance our research.
3. **Time duration**
   - Time during which the data are collected should be verified.
   - Data relating to far past spoil our conclusions and findings
   - Hence data should be consistent with the our research period
4. **Scope of data**
   - Before using the secondary data, matter relating to the scope of data, region etc are examined very accurately otherwise it mislead.
5. **Method of inquiry**
   - All method of collecting the data are suffer from certain limitation. It is advisable to verified the method though which the data are collected.
6. **Avoid the Estimates**
   - Be careful while using the estimates in the given data because it may be wrongly calculated.

Section – E: Answer the following **[08]**

(19)

YEAR	Residing in Hostel			Not residing in hostel			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016	1200	700	1900	400	100	500	1600	800	2400
2017	1400	840	2240	520	200	720	1920	1040	2960
2018	1680	1040	2720	520	200	720	2200	1240	3440

(20)

Class	fi	xi	fixi	Ixi-MeanI	fiIxi-MeanI
11 - 20	7	15.5	108.5	20.67	144.69
21-30	13	25.5	331.5	10.67	138.71
31-40	19	35.5	674.5	0.67	12.73
41-50	11	45.5	500.5	9.33	102.63

51-60	10	55.5	555	19.33	193.3
Total	60		2170		592.06

$$M.D. = \frac{\varepsilon fi|XI - meanI|}{n}$$

= 592.06/60

= 9.87

Coefficient of M.D. = 9.87/ 36.17

= 0.27

Section – F: Answer the following **[10]**

21)

$$z = \frac{fm-f1}{2fm-f1-f2} \times c$$

$$z = \frac{22-20}{2(22)-20-10} \times 20$$

$$= \frac{2}{14} \times 20$$

$$= 2.86$$

22)

Class	fi	xi	di=xi-a/c	fidi	fidi2
50-60	2	55	-2	-4	8
60-70	3	65	-1	-3	3
70-80	4	75	0	0	0
80-90	6	85	1	6	6
90-100	5	95	2	10	20
Total	20		0	9	37

$$s = \sqrt{\frac{\varepsilon fidi2}{n} - \frac{(\varepsilon fidi)2}{n}} \times c$$

$$= \sqrt{\frac{37}{20} - \frac{9}{20}} \times 10$$

$$= \sqrt{1.85 - 0.2025} \times 10$$

$$= \sqrt{1.85 - 0.2025} \times 10$$

=1.2835×10

=12.84

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