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Q1

Ans:⇒ 50, 79, 70, 48, 90, 68, 89, 92, 77

Solution:⇒

48, 50, 68, 70, 77, 79, 89, 90, 92

(1) Mean = $\frac{\text{Sum of Numbers}}{\text{Number of students}}$

$= \frac{48+50+68+70+77+79+89+90+92}{9}$

$= \frac{663}{9} = \boxed{73.66}$ ⇒ Ans

(2) Median:⇒

48, 50, 68, 70, [77], 79, 89, 90, 92

Median = (77) ⇒ Answer.

(3) Mode:⇒

⇒ There is no repeated number so the mode is zero.

Q4:-

Ans:- **Prevalance :⇒**

↳ Prevelence quantifies the proportion of individuals in a population who have the disease at a specific instant and provides an estimate of the probability (risk) that an individual will be ill at a point in time.

⇒ The formula for calculating the prevelence p = number of existing cases of a disease / total population (at a given point in time)

Point prevalance :⇒

↳ Prevalance can be thought of as the status of the disease in a population at a point in time and as such is also reffered to as point – prevelence.

⇒ This "point" can refer to a specific point in calender time or to a fixed point in the course of events that varies in real time from person

to person. Such as ~~varies in real~~ the onset of menopause or puberty or the third postoperative day.

* **Period Prevalence :⇒**

↳ it represents the proportion of cases that exist within a population at any point during a specified period of time.

⇒ the numerator thus includes cases that were present at the start of the period plus new cases that developed this time.

E.g.:⇒

↳ Frequency of patients receiving ~~phy~~ psychiatric Rx between may – 31-Dec 01 2008.

Q7:

Ans:- **Presentation of Data :⇒**

⇒ Data once collected should be presented in a such way as to be easily understood.

⇒ The style of presentation depends of course on type of data.

⇒ Data can be presented in as frequency tables, charts, graphs etc.

Frequency tables :⇒

↳ In a frequency table data is presented in a tabular form.

⇒ It gives the frequency with which a particular value appears in the data.

Frequency table :⇒

	f	Percent	V. Percent	Cumulative perce
Valid Strongly disagree	2	2.0	2.0	2.0
disagree	13	13.0	13.0	15.0
average	26	26.0	26.0	41.0
agree	26	26.0	26.0	67.0
Strongly agree	33	33.0	33.0	100.0
total	100	100.0	100.0	

* Graphs :⇒

↳ Another way to Summerize and disply data is through the use of graph or pictorial representations of numerical data. Graphs should be designed so that they convey at a single glance the general patterns in a set of data.

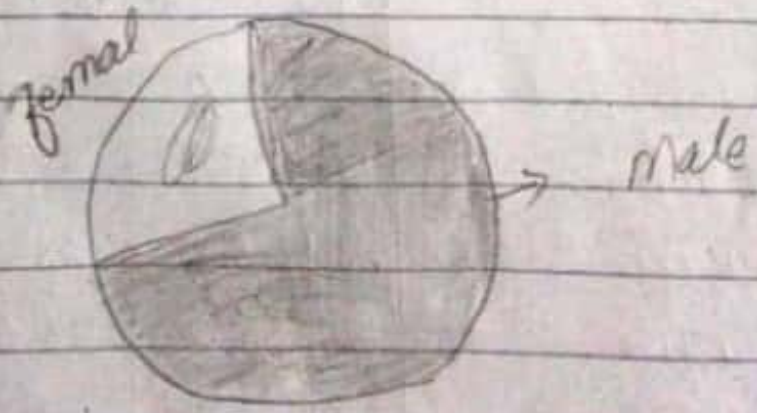
Bar charts :⇒

↳ Bar charts are used for nominal or ordinal data.

Pie chart :⇒

↳ Pie charts can also be used to display nominal or ordinal data.

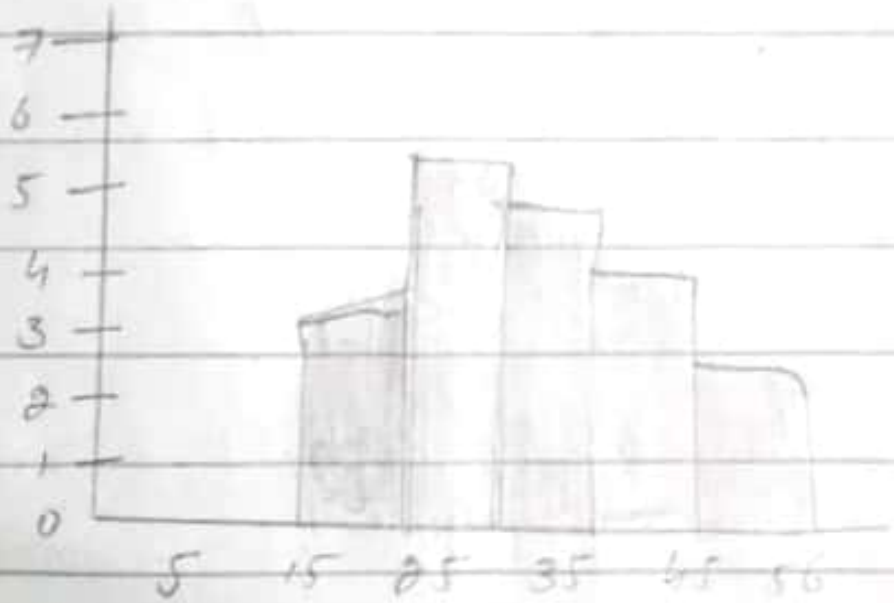
eg. Grender distribution



(6)

Histogram :⇒

↳ A histogram depicts a frequency distribution for quantitative data.



Q5

Ans: Hypothesis :⇒

↳ A testable theory or statement of belief used in evaluation of a population parameter of ~~interest~~ interest.

eg: Mean or proportion

* Steps in Hypothesis testing :⇒

① Statement of research question in terms of statistical hypothesis (Null and alternate hypothesis

② Selection of an appropriate level of significance. the significance level is the risk we are willing to take that a sample which showed a difference was misleading. 5% significance level means that we are ready to take a 5% chance of wrong results

⇒ ③ Choosing an appropriate statistics 1 test, z test for continuous data, chi square for proportions etc

Test Statistics is computed from the sample data and is used to determine whether the null hypothesis should be rejected or retained.

test statistics generates p value

P value:- Indicates the probability or likehood of obtaining a result at least as extreme as that observed in a study by chance alone, assuming that there is truly no association b/w exposure and outcome under consideration.

⇒ By convention the p value is set at 0.05 level. thus any value of p less than or equal to 0.05 indicates that there is at most a 5% probability of observing an association as large or larger than that found in the study due to chance alone give that there is no association b/w exposure and outcome. If p value > 0.05 do not reject the null hypothesis.

⇒ (4) Performing Calculation and obtaining p Value

(5) Drawing Conclusions rejecting null hypothesis if the p value is less than the set Significance level

α and β errors:

Test of Significance	True Ho Hypothesis	False Ho Hypothesis
Accept Ho Hypothesis	correct Decision	wrong Decision β Error
Reject Ho Hypothesis	wrong Decision	correct Dicision

Q3

Ans:

Relative Risk	Odd Ratio
⇒ It can only be used for data from studies with a randomly - selected sample.	⇒ It can be used to summarise data from most of the studies.
⇒ It can be used to calculate the attributable risk.	⇒ Give an estimate of risk when the prevelance of the outcome is not known.
⇒ Usually in - prospective, crose - sectional and clinical trait - studies.	⇒ usually in ~~retro~~ Retrospective studies and in cross sectional - studies.
⇒ It needs - incidence of the disease.	⇒ It does not need incidence for calculation.
⇒ It demonstrate temperarily	⇒ It has good estimate for ~~retro~~ ratitive risk in case of low frequency disease.

Examples :⇒

You could have two groups of women : one group has a mother, sister or daughter who has a breast - cancer

⇒ If you are normally on call 2 out of 7 days in a week, then the odds of you being on call on a certain day of week is $[(2/7)/(5/7)] = 0.40$