

2023

(2nd Semester)

PSYCHOLOGY

Paper : Psy-UG-201

(Statistics in Psychology)

Full Marks : 70

Pass Marks : 45%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 45)

*The figures in the margin indicate full marks
for the questions*

1. (a) What are the two main types of statistical methods? Describe the various scales of measurement giving appropriate examples. 3+6=9

Or

- (b) Describe discrete and continuous variables giving appropriate examples. Draw a frequency distribution table from the following set of scores : 4+5=9

8, 9, 8, 7, 10, 9, 6, 4, 9, 8,

7, 8, 10, 9, 8, 6, 9, 7, 8, 9

2. (a) Define mean, median and mode. Calculate the mean of the following data : $6+3=9$

8, 7, 4, 10, 8, 6, 8, 9, 9, 7, 3, 7, 6, 5, 8,
0, 9, 10, 7, 7, 3, 6, 7, 5, 2, 1, 6, 7, 10, 8

Or

- (b) Explain variability. Describe the various measures of variability. $3+6=9$

3. (a) Discuss the main features of the normal probability curve. What are the uses of the normal probability distribution? $5+4=9$

Or

- (b) Explain the concept of Z-score. The marks obtained by boys and girls on IQ test is given. Is the difference between the mean marks obtained by boys and girls significant? $4+5=9$

Boys : $n = 90$, Mean = 50, SD = 12

Girls : $n = 100$, Mean = 55, SD = 7.5

(Critical value at .05 level = 1.96 and at .01 level = 2.58)

4. (a) What do you mean by correlation as a statistical technique? Describe the uses of correlation in describing the characteristics of a relationship. $3+6=9$

Or

(b) For the following data—

- (i) sketch a scatter plot and make an estimate of the Pearson correlation;
 (ii) compute the Pearson correlation :

$$4+5=9$$

X	Y
2	6
1	5
3	3
0	7
4	4

5. (a) Construct a histogram using the following set of scores :

9

X	f
10-20	3
20-30	4
30-40	5
40-50	4
50-60	2

Or

(b) Construct a frequency polygon using the following set of scores :

9

X	f
4-6	2
6-8	3
8-10	3
10-12	5
12-14	4

★★★

2023

(2nd Semester)

PSYCHOLOGY

Paper : Psy-UG-201

(**Statistics in Psychology**)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

A. Choose the correct answer by putting a Tick (✓) mark
in the brackets provided : 1×10=10

1. Increase in the value of one variable with the
decrease in the value of the other variable
implies

- (a) zero correlation ()
- (b) positive correlation ()
- (c) negative correlation ()
- (d) no correlation ()

2. Consistency of scores obtained by students on two occasions implies

(a) validity ()

(b) reliability ()

(c) face validity ()

(d) correlation ()

3. Which of the following is true about strength of association between two variables?

(a) It can take only positive values ()

(b) It can take only negative values ()

(c) It varies from -1.0 through 0.0 to $+1.0$ ()

(d) It can have any integral value ()

4. In a negatively skewed distribution, the position of the mean with reference to median is

(a) left to the median ()

(b) right of the median ()

(c) same as the median ()

(d) same as the mode ()

5. Normalized standard scores are generally called

- (a) T-scores ()
- (b) F-scores ()
- (c) C-scores ()
- (d) None of the above ()

6. A measure of the spread or variability of scores in a group of people is called

- (a) norm ()
- (b) reliability ()
- (c) standard deviation ()
- (d) validity ()

7. Which of the following is true about normal curve?

- (a) Mean = Median = Mode ()
- (b) Mean = Median \neq Mode ()
- (c) Mean \neq Median = Mode ()
- (d) Mean \neq Median \neq Mode ()

8. The difference between maximum and minimum scores in statistics is called

- (a) range ()
- (b) frequency ()
- (c) class interval ()
- (d) size of class interval ()

9. The term 'statistical significance' means

- (a) how important the data is for future research on the topic ()
- (b) the conclusion that there is no reasonable alternative explanations ()
- (c) the inference that the observed effects are unlikely to be due to chance ()
- (d) the representativeness of the sample ()

10. A researcher studies the factors that determine the number of children that couples decide to have. The variable 'number of children' is

- (a) discrete variable ()
- (b) independent variable ()
- (c) continuous variable ()
- (d) None of the above ()

B. Indicate *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

- 01-64 1. The mean, median and mode differ in a normal distribution.

(T / F)

2. The mean of a distribution of Z-scores is 0.

(T / F)

3. Correlation does not imply causation.

(T / F)

4. The equation for calculating Pearson r using Z-scores is

$$r = \frac{\sum (x_i - \bar{x})}{\sqrt{\sum (x_i - \bar{x})^2}}$$

(T / F)

5. If a curve is negatively skewed, most of the scores occur at the higher values of the horizontal axis and the curve tails off toward the lower end.

(T / F)

SECTION—II

(Marks : 10)

C. Define the following :

2×5=10

1. Ogive

(7)

2. Sampling error

Ba/Psy-201/555



3. Percentile rank

4. Positive correlation

(10)

5. Quartile deviation

4. Positive correlation

☆☆☆

Ba/Psy-201/555

L23-200

