D 145425 **(Pages : 2)** **Name.....**

Reg. No.....

SECOND SEMESTER FIVE YEAR INTEGRATED P.G. - FYIP–CBCSS–REGULAR DEGREE EXAMINATION, APRIL 2026

Statistics

STA 02 IN 101—STATISTICS FOR PSYCHOLOGY II

(2025 Admissions)

Time : Two Hours Maximum : 70 Marks

Section A

All questions can be answered.
Each question carries 3 *marks.*
Ceiling 24 *marks.*

1. What is point biserial correlation ? Mention one situation where it is appropriate.
2. Define a contingency table. Give an example.
3. Define positive association with the help of an example.
4. Distinguish between simple correlation and partial correlation.
5. Stating the assumptions, write the general form of a multiple linear regression model with three independent variables.
6. Differentiate between simple linear regression and multiple linear regression.
7. Define Statistic. Give an example.
8. What do you mean by probability sampling ? Give an example.
9. Describe a real-life situation in which stratified random sampling is preferable.
10. Define binomial distribution. What is its mean ?

Turn over

Section B

All questions can be answered.
Each question carries 6 *marks.*
(Ceiling : 36 *Marks)*

11. What is the difference between a frequency table and a contingency table ? Give one example each.

12. A survey of 150 individuals yielded the following information.

    Number of males : 90, number of females : 60, number of employed males : 55, number of employed females : 20.

    Construct the contingency table and compute the expected frequencies assuming independence of gender and employment.

13. If the correlation co-efficient between X and Y, between Y and Z, between X and Z are respectively, 0.82, 0.75, 0.67, compute the partial correlations $r_{XY.Z}$, $r_{XZ.Y}$ and $r_{YZ.X}$.

14. If the pairwise correlation co-efficients among the three variables X, Y and Z are $r_{XY} = 0.84$, $r_{XZ} = 0.72$ and $r_{YZ} = 0.64$, compute all the multiple correlation co-efficients.

15. Define co-efficient of determination R^2. For a fitted regression model, the total sum of squares is 1050 and the residual sum of squares is 200. Compute R^2. Interpret its value.

16. Write down the probability density function of exponential distribution. Name any property which it possesses.

17. Let X be a random variable distributed as Poisson with mean 1. Compute $P(X < 1)$ and $P(X \geq 3)$.

18. What are the interrelationships between normal, t, χ^2 and F distributions ?

Section C

Answer any **one** *question.*
The question carries 10 *marks.*

19. Explain simple random sampling. Write a note on the methods of taking a simple random sample.

20. The marks secured by students in an examination is normally distributed with mean 60 and standard deviation 5. If a student is selected randomly, find the probability that :

    (a) He has secured more than 66 marks ;

    (b) His mark is less than 56.

    (c) His mark is in between 53 and 68.

(1 × 10 = 10 marks)