

20U239

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Name:.....

Reg.No:.....

SECOND SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2021

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U PSY2 C02 - REGRESSION ANALYSIS AND PROBABILITY THEORY

(Psychology - Complementary Course)

(2019 Admission onwards)

Time : 2.00 Hours

Maximum

Part A (Short answer questions)

Answer *all* question. Each question carries 2 marks.

1. Why is study of Correlation important?
2. What are the uses of scatter diagram
3. Define classical definition of probability.
4. What is the meaning of zero correlation coefficient?
5. Define regression analysis.
6. What are the properties of regression coefficients?
7. What is multiple regression?
8. Define union and intersection of a set.
9. Write any two properties of probability.
10. $(P(A)=2/3, P(B)=4/9)$ and $(P(A \cap B)=8/27)$ examine whether A and B are independent.
11. Define discrete and continuous random variable. Give some examples.
12. What is the relationship between distribution function and density function?

(Ceiling)

Part B (Short essay questions - Paragraph)

Answer *all* question. Each question carries 2 marks.

13. Marks obtained by 10 students in two subjects are given below:

Paper I :	45	70	65	30	90	40	50	75	85	60
Paper II :	35	90	70	40	95	45	60	80	85	50

Compute Rank coefficient of correlation.

14. Explain the merits and demerits of rank correlation.

15. Given the two equations for the regression lines.

$$\begin{aligned} 8x - 10y + 66 &= 0 \\ 40x - 18y - 214 &= 0 \end{aligned}$$

1. Identify the regression lines of Y on x and x on Y.
2. Obtain correlation coefficient.

16. Explain and distinguish between simple, partial and multiple correlation

17. A random variable X has the following distribution

X	0	1	2	3	4	5	6	7
F(x)	0	K	2K	2K	3K	K^2	$2K^2$	$7K^2$

(a) Find K?

(b) $P(X \leq 6)$?

18. State and prove the addition theorem for any three events.

19. Can the following be a pdf. Justify your answer where

$f(x) = \frac{-1}{2}$, for $x=2$ and $\frac{1}{2}$, for $x=3$ and $\frac{1}{3}$, for otherwise

(Ceilin

Part C (Essay questions)

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

20. What is correlation? Explain different types of correlation?

21. The heights in inches(x) and weights in lbs. (y) of 10 college students are given below: Calculate regression of y on x and x on y.

x	70	64	72	67	65	69	79	62	72	66
y	181	125	178	160	139	145	165	126	180	132

(1 × 10
