D4BPS2303 (PAGES 2) **Reg. No.....**

Name: .....

FOURTH SEMESTER B. Sc. DEGREE EXAMINATION, APRIL 2025

(Regular/Improvement/Supplementary)

PSYCHOLOGY

GPSY4C08T: STATISTICAL TECHNIQUES FOR PSYCHOLOGY

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. Define ratio scale.
2. What is the null hypothesis in the Mann- Whitney U test?
3. What do you mean by contingency table?
4. Mention the implications of ensuring reliability of a test.
5. What is a sign test?
6. Define Analysis of variance.
7. When is the Kruskal Wallis test used?
8. What do you mean by T score?
9. In a breeding experiment, the ratio of offspring in four classes was expected to be 1:3:3:9. The experiment yielded the data as follows:

Classes	: AA	Aa	aA	aa
No. of offspring	: 8	29	37	102

Obtain the expected frequencies.

10. Why Wilcoxon's signed rank test is considered more powerful than ordinary sign test?
11. How does the sign test handle tied observations?
12. Under what circumstances is Yate's correction applied in a chi square test?

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)

13. What are the different steps in framing a good questionnaire?
14. Explain Chi square test of goodness of fit.
15. Define validity. Explain different types of validity.
16. Define two-way ANOVA with a suitable example. What are the advantages of two-way ANOVA over one-way ANOVA?

(PTO)

17. A news poll asked a random sample of 895 Americans how concerned they were about their healthcare being impacted and getting worse if the Government created a system to provide healthcare to all Americans. The following table summarized the results:

	Political Affiliation		
	Democrat	Independent	Republican
Very concerned	46	116	88
Somewhat concerned	100	143	61
Not too/not all concerned	110	188	43

Test at the 1% significance level if political affiliation and concern about one's healthcare quality are dependent.

18. On a Railway reservation window, there was a long queue of Men (M) and Women (W) standing in the order in which they have come, as depicted in the following displayed matter. Use run test at 0.05 level of significance to confirm whether or not they were standing in a random order:

MWMWMMMWWMWMWMWMMMMWMWMWMMM

WWWMWMWMWMMWMMWMMMMWMWMM

19. What is a factorial experiment and how is it utilized in Psychological research?

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. In a study, the effectiveness of the methods of memorization was to be determined. For this purpose, three groups of 7 students, each randomly selected from class VII of a school were taken and each group was made to adopt a particular method of memorization. In the end, the performance was tested. the number of nonsense syllables correctly recalled by the students of these groups is presented below:

Group I	12	10	11	11	8	10	7
Group II	14	8	19	15	10	11	13
Group III	8	11	13	9	7	5	6

Apply the one way analysis of variance technique for testing the significance of the difference between group means.

21. Describe the 2^2 factorial experiment design and also construct the ANOVA table for this design.

(1 × 10 = 10 Marks)