C 44643 **(Pages : 3)** **Name.....**

Reg. No.....

FOURTH SEMESTER INTEGRATED P.G. DEGREE REGULAR EXAMINATION, APRIL 2023

M.Sc. Psychology

STA 4IC02—STATISTICAL TECHNIQUES FOR PSYCHOLOGY

(2021 Admissions)

Time : Two Hours Maximum : 60 Marks

Use of Calculator and Statistical table are permitted.

Part A (Short Answer Type Questions)

Maximum marks that can be scored from this Part is 20.
Each question carries 2 *marks.*

1. State the null hypothesis of one way ANOVA.
2. Briefly explain ordinal scale.
3. Define non parametric test.
4. What are contingency tables ?
5. Write a short note on Kruskal Wallis Test.
6. Define main effect in factorial design.
7. What are contingency tables ?
8. Write a short note on Run Test.
9. Write down the test statistic for Chi-square test for testing homogeneity.
10. Explain 2^2 factorial experiment.
11. What are the different types of validity ?
12. Briefly explain pilot survey.

Turn over

Part B (Short Essay/Paragraph Type Questions)

Maximum marks that can be scored from this Part is 30.
Each question carries 5 *marks.*

13. Perform one way ANOVA for the following data and make your conclusion :

Group	Measurements				
1	12	18	13	19	22
2	15	10	8	18	17
3	22	19	17	18	28
4	29	16	18	13	25

14. The demand for a particular spare part in a factory was found to vary from day to day. In a sample study the following information was obtained :

Digits	:	Mon	Tues	Wed	Thurs	Fri	Sat	Total
Frequency	:	1541	1320	1250	1422	1369	1288	8190

Test whether the number of parts demanded does not depend on the day of the week at 5 % level of significance.

15. Briefly explain the reliability and validity of test scores.

16. Define Critical difference. Explain it in the context of one way classified data.

17. Describe the analysis of variance for two way classified data.

18. Briefly explain the procedure of Wilcoxon Sign Rank Test.

19. The following two samples of measurements are obtained from sampling populations X and Y.

Population X : 31, 19, 22, 26, 15, 18, 36, 30, 29, 34, 33, 26, 19, 19, 26, 28, 31, 30

Population Y : 35, 14, 19, 30, 8, 14, 34, 28, 23, 24, 27, 28, 20, 21, 21, 26

Use Run test to check the hypothesis at 5 % level of significance that the two populations have identical distribution functions.

Part C (Essay Type Questions)

Answer any **one** *question.*
The question carries 10 *marks.*
Maximum marks that can be scored from this Part is 10.

20. The following table gives the yield in kg obtained by applying six different varieties of seed and four different varieties of fertilizers.

	Fertilizers			
Seeds	1	2	3	4
1	25	23	26	18
2	28	29	20	31
3	21	27	38	29
4	16	15	37	14
5	16	22	29	35
6	24	17	15	23

Analyze the data to test the significance of seed difference and fertilizer difference at 5 % level of significance.

21. a) Explain Chi-square test for goodness of fit.

b) How do you test for independence of attributes Chi-square test ?

(1 × 10 = 10 marks)