D 104715 **(Pages : 3)** **Name.....**

Reg. No.....

FOURTH SEMESTER INTEGRATED P.G. DEGREE (REGULAR/ SUPPLEMENTARY/IMPROVEMENT) EXAMINATION, APRIL 2024 [FOR 2021 AND 2022 ADMISSIONS] AND FOURTH SEMESTER INTEGRATED P.G. SUPPLEMENTARY/IMPROVEMENT EXAMINATION, APRIL 2023 {FOR 2020 ADMISSIONS}

M.Sc. Psychology

STA 4IC 02—STATISTICAL TECHNIQUES FOR PSYCHOLOGY

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. Define critical difference.
2. State the null hypotheses of two way ANOVA.
3. Briefly explain nominal scale.
4. Write down the test statistic for Chi-square test for testing homogeneity.
5. What are the qualities of a good questionnaire.
6. Define Validity.
7. What are the advantages of non parametric tests.
8. Explain 2^3 factorial experiment.
9. Explain Wilcoxon signed rank test.
10. Describe the ANOVA model for one way classified data.
11. What do you meant by pilot survey ?
12. Write a short note on run test.

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. Explain the procedure of Kruskal Wallis Test.

14. Describe the importance of factorial experiments in psychological studies.

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

16. Explain the chi square test for testing goodness of fit.

17. 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 two populations have identical distribution functions.

18. The distribution of employment and gender is given below. Use Chi-square test for testing the dependencies of employment and gender :

Gender	Employed	Not Employed
Male	1480	5720
female	120	680

19. Using Sign test, test whether the median body length (θ) of frogs of a particular variety is $H_0 : \theta_0 = 6.9$ cms against the alternative hypothesis $H_1 : \theta_1 = 6.9$ with $\alpha = 0.05$ on the basis of the following measurements.

    6.3, 5.8, 7.7, 8.5, 5.2, 6.7, 7.3, 5.6, 8.3, 7.7, 8.2, 6.0, 6.8, 6.9, 7.3, 7.0, 7.1, 6.6, 7.4

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. A reputed marketing agency in India has three different training programs for its salesmen. The three programs are Method - A, B, C. To assess the success of the programs, 4 salesmen from each of the programs were sent to the field. Their performances in terms of sales are given in the following table :

Salesman	Methods		
	A	B	C
1	24	26	22
2	26	30	26
3	25	27	24
4	27	25	24

Test whether there is significant difference among methods and among salesmen :

(a) Define Analysis of variance. Explain two way ANOVA test procedure with ANOVA Table

(b) Explain 2^2 factorial experiment with an example.

(1 × 10 = 10 marks)