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Name.....

Reg. No.....

**FOURTH SEMESTER INTEGRATED P.G. DEGREE REGULAR/
SUPPLEMENTARY/IMPROVEMENT EXAMINATION, APRIL 2026**

Allied Core Course

STA4IC02—STATISTICAL TECHNIQUES FOR PSYCHOLOGY

(2020 Admission Onwards)

Time : Two Hours

Maximum : 60 Marks

Section A*Each question carries 2 marks.**Maximum Marks that can be scored in this section is 20.**(Ceiling 20 marks)*

1. Define interval scale with an example.
2. What is meant by interaction effect in factorial design ?
3. State the test statistic used in Wilcoxon signed-rank test.
4. What is the purpose of using a sign test ?
5. Define *F-ratio* in the context of ANOVA.
6. What is the purpose of post hoc testing in ANOVA ?
7. Write two features of a good psychological questionnaire.
8. What is meant by internal consistency of a scale ?
9. Define the chi-square test for independence.
10. Mention any two limitations of nonparametric tests.
11. What is meant by standardization of a psychological test ?
12. What are blocking factors in factorial experiments ?

(Ceiling 20 marks)

Turn over

Section B

Each question carries 5 Marks.

*Maximum Marks that can be scored in this section is 30.
(Ceiling 30 marks)*

13. Explain the importance of scales of measurement in psychological assessment.
14. Describe the steps of conducting a Kruskal-Wallis test.
15. Explain how the chi-square test is used to test independence of attributes, with a small 2×2 example.

16. A psychological experiment records the following data before and after a therapy :

Before : 20, 22, 24, 21, 23, 25

After : 18, 19, 21, 20, 20, 22

Use the *sign test* to examine whether therapy reduced anxiety scores.

17. In a behavioral study, the following scores are obtained by three groups :

Group A : 23, 25, 22

Group B : 19, 20, 22

Group C : 26, 28, 27

Use Kruskal-Wallis test to determine whether the groups differ significantly.

18. The frequency of preference for three therapy methods is given below :

Method	Frequency
A	40
B	30
C	30

Use the *Chi-square goodness of fit test* to examine if all methods are equally preferred.

19. What are the key features and psychological applications of a 2^2 factorial experiment ?

(Ceiling 30 marks)

Section C

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

20. A psychological experiment investigates the effect of two factors : *stimulus type (visual / audio)* and *presentation time (short / long)* on response accuracy. The response scores under a 2^2 factorial design are :

	Short	Long
Visual	12	15
Audio	10	14

Analyze the data using appropriate factorial design interpretation (main effects and interaction).

21. (i) What is a psychological scale ?
- (ii) Discuss the methods of establishing **validity** and **reliability** in psychological scales, giving examples.

(1 × 10 = 10 marks)