

B. Sc. DEGREE END SEMESTER EXAMINATION – MARCH 2024**SEMESTER 4: STATISTICS FOR PSYCHOLOGY****COURSE: 19U4CPSTP04 – STATISTICAL INFERENCE – PAPER IV***(For Regular 2022 Admission and Improvement / Supplementary 2021/2020 Admissions)*

Time: Three Hours

Max. Marks: 75

PART A**Answer all questions. Each question carries 1 mark**

1. Any function of sample values is called.....
2. Type I error is made when the researcher
3. Standard error is standard deviation of
4. Parameter is a function of values
5. If a hypothesis do not specify the distribution completely, it is called
6.distribution is used for testing the equality of means of two normal populations when the samples taken from the populations are large.
7. Distribution is used for testing the equality of two population proportions
8. F test is used for testing the equality of two
9. The degrees of freedom for testing the independence of two attributes when the observed frequencies are in a table of 3 rows and 4 columns is
10. For a 2 x 2 contingency table, the observed frequencies in the first row are 12 and 18 while it is 22 and 12 in the second row. The value of Chi-square test statistic for testing independence is

(1 x 10 = 10)**PART B****Answer any eight of the following questions.****Each question carries 2 marks**

11. Define hypothesis
12. Define significance level
13. Define sampling distribution.
14. Define one tailed test.
15. A manufacturer of electric bulbs states that the mean life of electric bulbs would be 2600 hours. Formulate the hypothesis to test the statement of the manufacturer.
16. 240 men out of 1200 men selected from a city were found to have the habit of smoking. Test whether proportion of people having the habit of smoking is less than 25%.
17. Briefly explain paired sample t test.

18. What are the uses of Chi square distribution in testing of hypothesis?
19. Define degrees of freedom.
20. Give the statistic used for testing equality of means two normal populations when the samples are small and population standard deviations are not known.

(2 x 8 = 16)

PART C**Answer any five of the following questions*****Each question carries five marks***

21. Distinguish between large sample test and small sample tests.
22. What are the steps in a statistical test procedure?
23. Explain how you will test the hypothesis concerning mean of a normal population when the population standard deviation is not known and that the sample size is 14.
24. The mean mark of a sample of 64 students was found to be 488 with a standard deviation of 60. Test whether the sample is taken from a population having mean mark of 500. (Assume significance level of 2%)
25. A sample of 200 residents association from State A was taken and average population was 485 with standard deviation of 50. Another sample of 240 residents association from State B was taken and average population was 502 with standard deviation of 51. Test whether sample information support the statement that average population per residents association is the same for both the states.
26. In a random sample of 400 and 600 men from two cities 300 and 400 men are found to have taken vaccination against small pox. Do the data indicate at 5% level of significance that the cities differ significantly in the administration of vaccination?
27. A sample of 10 students were found to have the following marks in an examination.
70, 71, 68, 75, 81, 83, 95, 87, 90, 98.
Do the data support the assumption that the sample was taken from a population having an average mark of 75?

(5 x 5 = 25)

PART D**Answer any two of the following questions*****Each question carries 12 marks***

28. Explain how will you test
 - (a) The independence of two characteristics
 - (b) Equality of variances of two normal populations.

29. The IQ score of 8 students from School ABC and 10 students from school XYZ are given below. Test whether the mean mark of students in the two schools are significantly different.

Mark of students										
School ABC:	76,	87,	69,	74,	80,	56,	62,	65		
School XYZ:	59,	63,	75,	72,	54,	60,	58,	64,	72,	60

30. A special training programme was given for school children to improve their attitude towards the social commitment. A test was administered for 10 children before and after the training. Does the following data indicate that the attitude score improved after the training?

Attitude score of children based on a rating scale										
Before training:	46,	57,	49,	64,	50,	56,	42,	54,	71,	67
After training:	49,	63,	45,	72,	54,	60,	48,	54,	76,	70

31. According to the New Education Policy, children will be admitted in First Standard in Schools only if they are having minimum 6 years of age. There is a complaint that parents are managing to get admission for children having less than 6 years of age. Explain how will you test the whether the complaint is valid or not.

(12 x 2 = 24)
