

- (e) Explain the random sampling distribution of the mean and its characteristics.



[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6119

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Unique Paper Code : 2112112403

Name of the Paper : DSC-12: Inferential Statistics in Psychology (NEP-UGCF)

Name of the Course : **B.A. (H) Applied Psychology**

Semester : IV

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. There are **two** sections : **A** and **B**.
3. Attempt any **Three** questions from **Section-A**.
4. **Section-B** (Question no. 6) is compulsory.

Section-A

1. (a) Explain random sampling distribution of the differences between two group means.

(b) The teacher wanted to know the effectiveness of online and traditional teaching methods. He randomly divided class into two groups (A & B). After teaching for one semester, he administered an academic achievement test to both the groups. A data collected as follows:

	Group A	Group B
Mean	65	78
SD	8	10
N	45	45

Is the difference between the means of two groups significant at .01 level? (5+15=20)

Section-B

(Compulsory)

6. Write short notes on **any three** of the following :

(3×10=30)

- (a) Describe the nature and meaning of parametric and non-parametric statistics.
- (b) Define and differentiate between Type I and Type II errors.
- (c) Discuss the chi square test as a test of goodness of fit and independence with the help of examples.
- (d) Discuss the procedure of one-way analysis of variance (ANOVA).

- (b) A clinical psychologist wanted to test the effect of meditation in reducing anxiety. For this purpose a total of 6 subjects were selected and their baseline measure of anxiety was recorded. After this meditation as an intervention was utilized. The obtained scores of pre and post intervention on anxiety are as follows :

S. No. of Participants	Pre-test	Post-test
1	9	7
2	7	5
3	8	6
4	9	7
5	7	5
6	9	6

Test the null hypothesis at .05 level.

(5+15=20)

2. (a) What is post-hoc comparison.

- (b) A researcher was interested to know the difference among the students of three different streams: Arts, Commerce and Science in their mathematical aptitude. For this purpose, 5 students from each stream were randomly drawn from undergraduate course and assessed their mathematical aptitude. Following are the scores obtained :

Arts Group	Commerce Group	Science Group
7	10	12
6	9	14
5	11	16
8	8	10
9	12	13

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Determine, whether the three groups differ significantly in terms of their mathematical aptitude at .05 level. (5+15=20)

3. (a) Explain the assumptions and applications of chi square test.

- (b) A survey on 85 males and 94 females were conducted to know the opinion of the participants on the government policy of gender equality. Responses of the participants are as follows:

	Agree	Disagree	No Response
Male	25	40	20
Female	20	64	10

Do you think that the males and females' opinions towards government policy of gender equality significantly differ? Compute chi square and test H_0 at $\alpha = .01$ and .05. (5+15=20)

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4. (a) Discuss the hypotheses testing process in detail.

- (b) Given the following data from two independent sample on their well-being score :

	X	Y
Mean	78	82
SD	15	14
N	50	64
r	+0.48	

Conduct the appropriate test for hypothesis at .01 and .05 level of significance. (5+15=20)

5. (a) Differentiate between independent sample mean and correlated sample means.

P.T.O.