

# VEER NARMAD SOUTH GUJARAT UNIVERSITY

## M.Ed.

### *Optional Group - 1 :*

### *Paper - I : Concepts and Methods of Statistics in Education.*

### **Objectives**

1. To acquaint a student teacher with the basic concepts of statistics.
2. To enable a student teacher to learn the various statistical methods used in the analysis of data.
3. To enable a student teacher to understand the basic assumptions and uses of various statistics.
4. To develop among a student teacher an ability to draw inferences and interpret the results of statistical analysis.

### **Syllabus**

#### **UNIT -1 : DESCRIPTIVE STATISTICS :**

##### **(A) :**

1. Role of Statistics in Educational Research.
2. Uses and misuse of statistics
3. Scales of Measurement : nominal, ordinal, interval, ratio.

##### **(B) : CONCEPT, CALCULATION AND USES OF :**

1. Measures of Central tendencies
2. Measures of variability
3. Percentiles & percentile ranks.

##### **(C) :**

1. Frequency distribution and normal probability curve, Polygon, Histogram, Ogive
2. Characteristics of normal curve.
3. The equation for normal curve
4. Testing the normality of distribution : Skewness, kurtosis & Application of normal curve.

##### **(D) : COMPUTATION OF CORRELATION :**

1. Pearson's correlation
2. Spearman's rank order correlation
3. Contingency coefficient.

**UNIT -2 : STATISTICAL INFERENCE :**

**(A) :**

1. Meaning of statistical inference
2. Concept of sampling distribution
3. The concept of standard error, The standard error of mean, S.D., difference between two means, coefficient of correlation, median.

**(B) :**

1. Levels of confidence : 90%, 95%, 99%
2. Degree of freedom

**(C) :**

1. Determining by standard error the significance of : Mean, median, S. D., Quartile deviation, percentage, coefficient of correlation.

**UNIT - 3 : ANALYSIS OF VARIANCE, REGRESSION, CHI-SQUARE :**

**(A) :**

1. The meaning of analysis of variance
2. The sums of squares
3. Mean square
4. The F ratio

**(B) : ASSUMPTIONS UNDERLYING THE ANALYSIS OF VARIANCE:**

1. One way classification
2. Two way classification
3. Factorial design (Two factor design)

**(C) : ANALYSIS OF COVARIANCE (ONLY CONCEPT)**

**(D) :**

1. The concept of regression
2. Regression equations
3. Calculations based on regression co-efficient

**(E) :**

1. The Chi-square test : Concept and uses
2. Calculation of Chi- square with equi-probable events and contingencies tables.

**UNIT - 4 : FACTOR ANALYSIS AND NON-PARAMETRIC TESTS :**

**(A) :**

1. The concept of factor analysis
2. Importance and uses of factor analysis
3. Contribution of Spearman, Thurstone and Holzinger in factor analysis

**(B) :**

1. Calculating a factor matrix from a given correlation matrix
2. Calculating communalities and latent roots
3. Interpreting a factor matrix

**(C) :**

1. Spearman - Brown formula for calculating split-half reliability of a test.
2. Effect of lengthening a test on its reliability - calculations.
3. Effect of lengthening a test on its validity - calculations.

**(D) : USING THE 'FLANAGAN TABLE' FOR DETERMINING ITEM VALIDITY.**

### **REFERENCES AND SUGGESTED READINGS**

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# VEER NARMAD SOUTH GUJARAT UNIVERSITY

## M.Ed.

### *Optional Group - 1 :*

### *Paper - II : Psychological Testing*

## Objectives

1. To acquaint a student teacher with the meaning, uses and types of psychological tests.
2. A student teacher will be able to understand characteristics of a good psychological test.
3. A student teacher will be able to understand the process of construction and administration of the test.
4. A student teacher will be able to understand meaning and construction of achievement test.
5. To acquaint a student teacher with the concept and uses of diagnostic test.
6. To acquaint a student teacher with the test of intelligence.
7. A student teacher will be able to understand multifactor test batteries, Interest inventories, Attitude scale and personality test.

## Syllabus

### UNIT -1 : MEANING AND CHARACTERISTICS OF A TEST

#### (A) : DEFINITION, MEANING AND CHARACTERISTICS OF A PSYCHOLOGICAL TEST

1. Definition of Psychological test
2. Meaning of Psychological test
3. Uses of Psychological test
4. Types of Psychological test
5. Characteristics of a good psychological test

#### (B) : TEST CONSTRUCTION

1. Item analysis
2. Try out of the test
3. Sampling procedure
4. Norms
5. Concept of reliability and validity

**UNIT -2 : ADMINISTRATION OF THE TEST AND INTELLIGENCE TEST :**

**(A) : ADMINISTRATION OF THE TEST :**

1. Testing conditions
2. Procedure of test administration
3. Factors affecting on test results.

**(B) : TESTS OF INTELLIGENCE :**

1. Clinical uses of intelligence test
2. Binet scale
3. Stan- ford- Binet scale of 1937-1960
4. Wechsler scale : WAIS and WPPSI
5. Intelligence test prepared in Gujarat.

**UNIT -3 : TEST BATTERIES AND ACHIEVEMENT TEST**

**(A) : MULTIFACTOR TEST BATTERIES :**

1. Description of differential Aptitude Tests (DAT)
2. Description of General Aptitude test battery (GATB)
3. Description of Flanagan Aptitude Classification Test (FACT)
4. Use of Aptitude Tests in Guidance and selection.

**(B) : TEST OF EDUCATIONAL ACHIEVEMENT :**

1. Meaning and construction of achievement test
2. Meaning and importance of a blue print of the achievement test
3. Uses of achievement test in guidance and education
4. Concept and uses of diagnostic test

**UNIT -4 : INTEREST INVENTORIES AND PERSONALITY TEST**

**(A) : INTEREST INVENTORIES :**

1. Strong Campbell Interest Inventory - SCII
2. Kuder preference Records
3. Interest Inventories Prepared in Gujarat.

**(B) : ATTITUDE SCALE**

1. Thurston Scale
2. Likert Scale

**(C) : PERSONALITY TESTS :**

1. Bell's Adjustment Inventory
2. Desai Adjustment Inventory
3. Minnesota Multiphasic Personality Inventory - MMPI
4. California Psychological Inventory - CPI
5. Mooney Problem Check list.

## REFERENCES AND SUGGESTED READINGS

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